ANSI MH10.8.2-2010
(Continuous Maintenance of ANSI MH10.8.2-2006)

American National Standard

Data Identifier and Application Identifier Standard

Approved: xx May 2010

Abstract
This standard provides a comprehensive dictionary of MH 10/SC 8 Data Identifiers and GS1 Application Identifiers, provides for the assignment of new Data Identifiers, as required, and provides a document detailing the correlation, or mapping, of Data Identifiers to Application Identifiers, where a correlation exists.

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American National Standard

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Foreword (this forward is not part of American National Standard MH10.8.2-2010)

The Federation of Automatic Coding Technologies (FACT) developed a standard for Data Identifiers (DIs) in 1989. In early 1990 FACT submitted the FACT Data Identifier Standard dated 2 October 1989 to the American National Standards Institute (ANSI). This standard was approved in 1991 and has been published as ANSI/FACT-1-1991.

In 1991 the Uniform Code Council (GS1) and the EAN International (EAN), known as GS1, adopted an expanded list of application identifiers which served many of the same purposes as had been accomplished with FACT DIs. These GS1 identifiers are known as Application Identifiers (AIs).

The existence of two approaches to accomplish the same level of identification became a burden to those companies supplying general trade product to many customers. FACT was asked to develop a standard that would harmonize these two approaches.

The stated mission of the GS1 is to enable "...related distribution channels to operate more efficiently and effectively while contributing added value..." to the end user. FACT's mission statement included a charge to "...reduce the proliferation of conflicting bar code standards..." to achieve similar efficiencies.

Recognizing their common missions, FACT and GS1 committed to the development of a committee that would issue a comprehensive dictionary of Data and Application Identifiers. The dictionary would be submitted to ANSI as a revision for ANSI/FACT-1, 1991. On December 31, 1992, the FACT organization was dissolved. Prior to its dissolution, the Sub-committee 8 of Accredited Standards Committee (ASC) MH10 agreed to continue its maintenance and assume responsibility for the document.

It is the mission of this committee to develop a comprehensive dictionary of Data and Application Identifiers, assign new Data Identifiers, as required, and to provide a document detailing the correlation, or mapping, of Data Identifiers to Application Identifiers, where a correlation exists.

As with any American National standard, new requirements are identified and interested parties request the assignment of new Data Identifiers and Application Identifiers to meet the needs of a particular industry or activity. ANSI has designated this standard as being “Under Continuous Maintenance”. Proposed changes to the standard that are accepted by the MH10.8.2 Data Identifier Committee shall be integrated into the previously published version at the recommendation of the committee. Upon approval of the new version by MH10 Subcommittee 8 and the full MH10 committee, the standard will be published as a new version.

The committee plans to incorporate accepted revisions into the standard as frequently as necessary, but in no case will a published revised standard be issued more frequently than yearly, in line with indicated needs and industry developments. Each accepted revision since the last published version shall be identified in a “Document Maintenance Summary” appearing immediately before the Table of Contents of the standard.

This standard has been updated from the last published issue of ANS MH10.8.2 representing the third five-year revision of the standard, published in 2006, published in 2002; the first revision occurring in 1995. Requests received subsequent to the date of the standard will be added to the draft standard for trial use and will be considered for incorporation at the fourth five-year revision of the standard.

Users desiring assignment of new Data Identifiers may submit their request to the ANSI MH 10 DI Maintenance Chairman, Craig K. Harmon ((V): +1 319/364-0212 • (E): craig.harmon@qed.org).

Users desiring assignment of new Application Identifiers may submit their request to http://www.gs1.org/.

Note:

The following annexes are provided:

- Annex A - Quick Reference to Data Identifier (DI) Categories
- Annex B - Annotated Listing Of Assigned Data Identifier (DI) Categories
- Annex C - Data Identifier (DI) Application Notes
- Annex D - ANS X12.3 Data Element Number 355 Unit of Measure Code
- Annex E - ANS X12.3 Data Element Number 374 Date/Time Codes
- Annex F - ANS X12.3 Data Element Numbers 208 & 209 Hazardous Material Codes
- Annex G - ISO 4217 Unit of Value Currencies and Funds
- Annex H - ISO 3166-1:1997 Country Code
- Annex I - Data Identifier and Application Identifier Request Forms & Metadata
- Annex J - User Guidance
- Annex K - System Identifiers
- Annex L – Identifiers for Returnable Packaging Items

At the time of approval, the MH10 committee consisted of the following members:

AIM Global
American Trucking Associations
American Wood Packaging Association
APA - The Engineered Wood Association
Association of American Railroads
Assoc. of Professional Material Handling Consultant
ASTM
Automotive Industry Action Group
Containerization & Intermodal Institute, Inc.
Fibre Box Association
Flexible Intermediate Bulk Containers Association
Glass Packaging Institute
GS1 US
IDEAllinance
Institute of Packaging Professionals
Integrated Business Communications Alliance
Intermec Technologies
International Cargo Handling Coordination Association
International Foodservice Distributors Association
International Safe Transit Association
Material Handling Industry
Material Handling Management Society
National American Wholesale Grocer's Association
National Wooden Pallet & Container Association
Packaging Machinery Manufacturers Institute
Plastic Drum Institute
Q.E.D. Systems
Rack Manufacturers Institute
Reusable Industrial Packaging Association
Soap & Detergent Association
Steel Shipping Container Institute
Textile Bag Manufacturers Association
United Parcel Service (UPS)
U.S. Air Force
U.S. Dept. of Agriculture
U.S. Dept. of Defense TRANSCOM
U.S. Forest Products Laboratory
United Fresh Fruit & Vegetable Association
United Parcel Service
Virginia Tech – Center for Unit Load Design

Data Identifier Maintenance Committee

ANSI MH10.8.2 is a reference standard to ISO/IEC 15418 (GS1 Application Identifiers and MH 10/SC 8 Data Identifiers). As such a Data Identifier Maintenance Committee was established representing diverse interests from various countries. Data Identifier Maintenance Committee Members are:

Craig K. Harmon, Q.E.D. Systems, Chair
Carl Kirk, American Trucking Associations (ATA)
Morris Brown, Automotive Industry Action Group (AIAG)
Akira Shibata, Denso, SC 31 Committee of Japan
Bert Moore, IDAT Consulting
Sten Lindgren, Odette Sweden
Allan B. Gilligan, A & N Associates
Erich Guenter, IBM (Germany) & EDIFICE
Heinrich Oehlmann, Eurodata Council, DIN
John Wells, IPC Technology, UPU
Mark Reboulet, United States Air Force, DoD

DOCUMENT MAINTENANCE SUMMARY

This document has had the following changes since the approval of ANS MH10.8.2:2010 by ASC MH 10/SC 8.

Date	Action	Summary

TABLE OF CONTENTS

Data Identifier and Application Identifier Standard

1. Scope

This standard provides a comprehensive dictionary of MH 10/SC 8 Data Identifiers and GS1 Application Identifiers, provides for the assignment of new Data Identifiers, as required, and provides a document detailing the correlation, or mapping, of Data Identifiers to Application Identifiers, where a correlation exists.

This standard does not supersede or replace any applicable safety or regulatory marking or labeling requirements. The standard is to be applied in addition to any other mandated labeling requirements.

Unless otherwise stated within the document, the allowable character set for data fields identified by an ANS MH10.8.2 Data Identifier are the upper case alphabetic characters A to Z and the numeric characters 0 to 9.

2. Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 646	Information technology -- ISO 7-bit coded character set for information interchange
ISO 3166-1	Codes for the representation of names of countries and their subdivisions, Part 1: Country Codes
ISO 4217	Codes for the representation of currencies and funds
ISO/IEC 15418	Information technology – Automatic identification and data capture techniques – GS1 Application Identifiers and ASC MH 10 Data Identifiers
ISO/IEC 15424	Information technology – Automatic identification and data capture techniques – Data carrier/Symbology identifiers
ISO/IEC 15459-1	Automatic Identification and Data Capture Techniques – Information technology – Unique identifiers for item management – Part 1: Unique identification of transport units
ISO/IEC 15459-2	Automatic Identification and Data Capture Technologies – Information technology – Unique identifiers for item management – Part 2: Registration procedures
ISO/IEC 19762	Information Technology, AIDC Techniques — Harmonized Vocabulary
UN/EDIFACT Code List 8053	United Nations Directories for Electronic Data Interchange for Administration, Commerce and Transport – Equipment Type Qualifier
UN/EDIFACT Code List 3035	United Nations Directories for Electronic Data Interchange for Administration, Commerce and Transport – Party Function Qualifier
UPU Standard M82-3	Universal Postal Union – Attribute Definitions
ANS X12.3	Electronic Data Interchange Data Element Dictionary, Version 004000
ANS HIBC 2	Health Industry Supplier Labeler Standard
IEEE 802.11	IEEE Standard for Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications
GS1 General Specifications	GS1 General Specifications
GR-485-CORE	COMMON LANGUAGE® Equipment Codes (CLEI™ Codes) - Generic Requirements for Processes and Guidelines

3. Terms and Definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 19762 and the following apply.

3.1 "+ " (plus sign)
The "+" is used with specific Data Identifiers defined within this document (e.g. 14K and 3W) to separate different types of data that are encoded within a single field (e.g., a single bar code symbol). The "+" is also referenced as a flag character used by the HIBCC. The "+" may also be used to concatenate multiple data fields using Data Identifiers.

3.2 actual weight
The weight as measured. Also see "Theoretical Weight".

3.3 allocated
Set aside for a specific purpose, such as a set of Data Identifiers allocated for a specific Category.

3.4 alphanumeric code
A code containing both numbers (0-9) and alphabetic characters (A-Z).

3.5 Application Identifier
A GS1 specified character (or string of characters) that defines the general category or intended use of the data that follows.

3.6 assigned
Designated for a specific purpose, such as a given Data Identifier assigned for a specific purpose (e.g., "Container Type" has been assigned the Data Identifier "B".)

3.7 authorized retail industry format
A coding structure assigned by the GS1.

3.8 bill of lading
An itemized list of goods contained in a shipment.

3.9 budget responsibility
Accountability for the planning and reporting of resource expenditures.

3.10 carrier
In a transaction, the party that provides transportation services (e.g., air, boat, rail, truck, etc.)

3.11 category
A class or division in a scheme of classification (e.g., the *Category* for dating formats is **Category 4: Date.**)

3.12 cell
A discrete system that performs a predetermined series of operations in the manufacture or assembly of an item.

3.13 character
A letter, digit or special character (e.g., -, +, /, $) that is used to represent data.

3.14 closed system
A system in which a single authority has control over all elements (e.g., data content, bar code printing, bar code scanners). Opposite of "Open System."

3.15 code
A structured set of characters used to represent an entity, event, person, or organization. For example: 01, 02,...,12 may be used to represent the months January, February,..., December.

3.16 common carrier
A transportation business that offers service to the general public. *Also see "Carrier."*

3.17 concatenate
The combination of specific pieces of data into a single field. In this document variable length data is separated by a plus "+" symbol (e.g. 3W and 14K). Application standards may define additional uses for a concatenation character.

3.18 container
Something that encloses or can enclose one or more items (e.g., box, crate, can, jar, etc.)

3.19 container security seal
A pre-numbered device designed to secure a container to preclude its being opened without detection (e.g., doors of a truck trailer).

3.20 customer
In a transaction, the party that receives, buys, or consumes an item or service.

3.21 Data Identifier (DI)
A specified character (or string of characters) that defines the general category or intended use of the data that follows. (Note: ASC MH10 Data Identifiers have a format of one alphabetic character alone, or one alphabetic character prefixed by one, two or three numeric characters.)

3.22 digit
Any of the numeric characters 0 (zero) through 9 (nine), inclusive.

3.23 DUNS Number
A nine-digit site-specific trading partner identification code assigned by Dun & Bradstreet

3.24 e.g.
(L. *exempli gratia*) for example.

3.25 electronic data interchange (EDI)
The electronic exchange of structured information between locations over a telecommunications network. Usually refers to business transactions transmitted from one computer application to another computer application.

3.26 employee
One whose labor or services are engaged by another, either for pay or on a volunteer basis.

3.27 entity
In this document, any person, place or thing that can be distinctly identified from other identical or like persons, places, or things. A subset of "Item".

3.28 exclusive assignment
A Data Identifier whose prior use by a single specific agency, under a previously existing standard, is recognized by ANSI MH10.8.2 and whose use is defined within these Guidelines as the sole province of that agency.

3.29 first level...fifth level
Used to provide additional or different levels of information about a class of items or entities within a category (such as "L," "P," or "T") about the same entity. *See Annex C.4.2, C.5, and C.8, respectively, for examples.*

3.30 fixed asset
A durable or non-consumable item owned by a company or agency.

3.31 flag character
A character that is used to signify that the data, which follows, conforms to a specific industry standard. Note that these standards do not conform to the overall ANSI MH10.8.2 DAI Standard. *See Category 0.*

3.32 i.e.
(L. *id est*) that is (to say).

3.33 item
A member of a class of entities or services that may be grouped together because of certain likeness or common traits (e.g., a part or a service). *Also see "Entity".*

3.34 item code
A code identifying an item.

3.35 license plate
A code assigned to a transport unit by its issuer, in accordance with ISO/IEC 15459-1, *Technical Standard for unique identification of transport units*. Any license plate issuer shall be authorized by an issuing agency in accordance with the rules set up by that agency and ISO/IEC 15459-2, *Procedural Standard for unique identification of transport units*. Issuing agencies are authorized and registered by the Registration Authority.

A license plate number:

a) shall start with a string of characters, the issuing agency code (IAC), assigned to the issuing agency by the Registration Authority;
b) shall conform to a format specified by the issuing agency;
c) shall be unique in the sense that no issuer re-issues a number until a sufficient period of time has passed so that the first number has ceased to be of significance to any user responsible to the Issuing Agency;
d) shall contain only numeric and upper case alphabetic characters drawn from ISO 646 (not including lower case characters or punctuation marks);
e) shall not contain more than 35 characters;

3.36 manufacturer
Actual producer/fabricator of an entity not necessarily the supplier in a transaction. Manufacturer's ID code is a property of an entity, not of a transaction. *See "Supplier" for transaction.*

3.37 mutually defined code
A code that’s meaning has been agreed upon by all appropriate parties to the transaction.

3.38 n/e
No equivalent Data Identifier for Application Identifier or no equivalent Application Identifier for Data Identifier.

3.39 number
A set of characters that refer to a code structure, not restricted to numeric digits. In this document the term "number" is used synonymously with the term "code". *Also see "numeric code".*

3.40 numeric code
A code that contains only the digits 0 (zero) through 9 (nine).

3.41 open system
A system that conforms to established standards and therefore can be readily connected to other systems that comply with the same standard. Opposite of "Closed System".

3.42 operation
A process or action that is part of a series in some work. The process whereby a work piece is changed from one state to some other state.

3.43 operation code
A code used to identify the type of work performed.

3.44 operation sequence number
A number that defines the order of a particular operation in a series of operations, generally in a manufacturing or assembly process.

3.45 order
A request or commission to make or provide an item or service (e.g., purchase order, shop order, customer order, work order).

3.46 package ID
A code that provides the ability to differentiate one package from any other package (e.g., carton or label serial number). *Also see "Serial Number" and "License Plate"*

3.47 packaging
The container, wrapping, etc. (generally considered to be disposable), in which a commodity is packed for sale or transport. That which provides protection and containment of items plus ease of handling by manual or mechanical means.

3.48 PRO number (PRO #)
The unique number assigned by a motor freight carrier and placed on a freight bill for internal billing purposes. The PRO (PROgressive) number is usually the freight bill (invoice) number. May also be affixed to a container (or containers) in a shipment for tracking purposes.

3.49 reserved
A category or Data Identifier that is being held for future use by the committee controlling this document.

3.50 returnable container
A container that, after having been used to enclose or transport items, is returned to the supplier or owner.

3.51 returnable packaging item
Materials, owned by the shipper, that are placed adjacent to or beneath stacked goods to protect and secure them, such as thermo-formed trays and posts, shipped to a customer with full expectation that such devices will be returned to the supplier, as assets of value in addition to the actual container

NOTE See Annex L.

3.52 route code
As employed in DI "6L" - Data element #1 of the TDCC/ANSI Trade Elements Data Dictionary. Route Code may have up to 13 characters.

3.53 serial number
A unique code assigned to an item that provides for the differentiation of that item from any other like item. Within these guidelines *serial number* takes on two meanings. The first meaning is a code assigned to an individual entity for the life of the product such as a computer serial number. The second meaning is a code assigned to a package, usually contained on the package label, which uniquely identifies that package from any other package.

3.54 status code
A code that represents a condition or situation.

3.55 supplier
In a transaction, the party that produces, provides, or furnishes an item or service, other than transportation services. *Also see "Carrier" and "Manufacturer".*

3.56 theoretical weight
Weight as calculated. *Also see "Actual Weight".*

3.57 tool ID code
A code that uniquely identifies a particular implement required by a person or machine to perform a task.

3.58 traceability number
A number assigned by a controlling authority to provide unique identification to an entity or group of entities for subsequent tracking and/or identification.

3.59 transaction
An exchange conducted, performed or carried out between two (or more) parties that accomplishes a particular action or result.

3.60 VMRS
Vehicle Maintenance Reporting Standard is an established standard used to identify and track vehicle repair parts, primarily in the transportation industry, having cross-industry (and international) application for any company that maintains a fleet of vehicles.

3.61 waybill
A document prepared by the carrier of a shipment of goods that contains details of the shipment, route, and charges.

3.62 work order number
An identifying number associated with the process, or authorization of, the manufacture or assembly of an item.

SECTION I
DATA IDENTIFIERS
(DIs)

DEFINED CATEGORIES

Editor's Note: The usage of the term "number" below is not intended to be restricted to numeric characters only, but to generically refer to a code structure which may contain numeric and/or alphabetic data. The following Data Identifiers are assigned to the usages described. The usage of any alphabetic, numeric, or special character in a leading position (as a "Data Identifier or Application Identifier") not defined herein is reserved for future assignment by the body controlling these guidelines. Unless otherwise specified leading zeroes (0's) are non-significant and not to be employed (e.g., 0A, 00A, 000A, 01A, 011A). References to other ANSI Standards are to the most current version of that standard.

CATEGORY 0: **Special Characters Not Assigned or Controlled by ANSI/MH10.8** **Note1 & 2**

The usage of any alphabetic, numeric, or special character in a leading position (as a "Data Identifier or Application Identifier") not defined herein is reserved for future assignment by the body controlling these guidelines.

Allocation: **All Non-Alphanumeric Characters**

Assigned:		
	+	Health Industry Business Communications Council (HIBCC)
	-	Reserved
	&	American Association of Blood Banks (AABB)
	=	International Society for Blood Transfusion (ISBT)
	FNC1	Appears in the first position following the symbology start character of a Code 128, Code 49, or Code 16K Symbol to signify a GS1-controlled symbol
	[)>$^{R}_{S}$	Left square bracket, right parenthesis, greater than sign, record separator character. Data structure compliant to ISO/IEC 15434, *Information technology — Automatic Identification and Data Capture Techniques — Syntax for High Capacity ADC Media*
	-	Hyphen – Minus. Pharmaceutical Central Number (PZN), controlled by IFA-ABDATA, Germany
	!	Exclamation mark. Eurocode-IBLS

CATEGORY 1: **Reserved**

Allocation:	**A - 999A**	
Assigned:	**A - 999A**	Reserved

[1] See Annex K

[2] This is not an exhaustive list. It is not advisable to assign special characters in a "closed" system unless an exhaustive search has been accomplished that ensures that the special characters in question will never be confronted on items supplied from outside the closed system.

CATEGORY 2:	**Container Information**	
Allocation:	**B - 999B**	
Assigned:	**B**	Container Type (internally assigned or mutually defined)
	1B	Returnable container identification code assigned by the container owner or the appropriate regulatory agency (e.g., a metal tub, basket, reel, unit load device (ULD), trailer, tank, or intermodal container) (excludes gas cylinders *See "2B"*)
	2B	Gas Cylinder Container Identification Code assigned by the manufacturer in conformance with U.S. Department of Transportation (D.O.T.) standards
	3B	Motor Freight Transport Equipment Identification Code assigned by the manufacturer in conformance with International Organization for Standardization (ISO) standards
Field Length – an4+an..10	**4B**	Standard Carrier Alpha Code (SCAC) (an4 - dash "-" filled left) and carrier assigned trailer number
Field Length – an..35	**5B**	Receptacle Asset Number – Consisting of two joined parts: — Identification of an organization in accordance with ISO/IEC 15459 and a unique entity identification assigned in accordance with rules established by the issuing agency — A unique serial number assigned by the entity, ending with a 3-character container type code taken from EDIFACT Code List 8053 or UPU standard M82-3. (If the container type code listed is less than three characters in length, the field will be dash "-" filled left to the length of three characters)
	6B	Reserved
Field Length – an2+an11	**7B**	Identification of a returnable container owner assigned in cooperation with BIC, followed by a unique container identification assigned by the container owner, e.g., 7B OC EI CSN CD, where the OC is the owner code assigned in cooperation with BIC, the CSN is unique container identification assigned by the equipment owner, and CD is a modulus 11 check digit calculated in accordance with Annex A, ISO 6346.
Field Length – an2+an3	**8B**	Identification of a returnable container owner assigned in cooperation with BIC
	9B	Container Type as defined in ISO 6346
Field Length – an3+an4	**10B**	Container Ownership Code. Actual four-character abbreviation marked on the container by the owner. For DOD owned containers see Defense Transportation Regulation App EE-6
	11B	Van Number (complete number minus check digit)
	12B	Check digit of Van Number identified in 11B
	13B	Container Number Code (last 5 digits of number not counting check digit)
	14B – 24B	Reserved
Field Length – an3+an..35	**25B**	Identification of a party to a transaction as identified in 18V, followed by the supplier assigned serial number to a returnable transport item (RTI)
	26B – 999B	

CATEGORY 3:	**Field Continuation**	
Allocation:	**C - 999C**	
Assigned:	**C**	Continuation of an Item Code (Category 16) assigned by Customer that is too long for a required field size
	1C	Continuation of Traceability Code (Category 20) assigned by Supplier
	2C	Continuation of Serial Number (Category 19) assigned by Supplier
	3C	Continuation of Free Text (Category 26) mutually defined between Supplier/Carrier/Customer
	4C	Continuation of Transaction Reference (Category 11) mutually defined between Supplier/Carrier/Customer
	5C	Continuation of Item Code (Category 16) Assigned by Supplier
	6C	Reserved – Prior Assignment (2009) – To be re-released upon publication of AIM IUIDC-1, currently on hold.
	7C - 999C	Reserved
CATEGORY 4:	**Date**	
Allocation:	**D - 999D**	
Assigned:	**D**	Format YYMMDD Note 3
Field Length - n6		
Field Length - n6	**1D**	Format DDMMYY Note 2
Field Length - n6	**2D**	Format MMDDYY Note 2
Field Length - n4	**3D**	Format YDDD (Julian) Note 2
Field Length - n5	**4D**	Format YYDDD (Julian) Note 2
Field Length - n6+an3	**5D**	ISO format YYMMDD immediately followed by an ANSI X12.3 Data Element Number 374 Qualifier providing a code specifying type of date (e.g., ship date, manufacture date)
Field Length - n8+an3	**6D**	ISO format YYYYMMDD immediately followed by an ANSI X12.3 Data Element Number 374 Qualifier providing a code specifying type of date (e.g., ship date, manufacture date)
Field Length - n4	**7D**	Format MMYY Note 2
	8D	Reserved
	9D	Date (structure and significance mutually defined)
Field Length - n4	**10D**	Format YYWW Note 2
Field Length - n6	**11D**	Format YYYYWW Note 2
Field Length - n8	**12D**	Format YYYYMMDD Note 2
Field Length - n8	**13D**	Oldest and Newest Manufacturing Date in the format YYWWYYWW
Field Length - n8	**14D**	Expiration Date (YYYYMMDD)
Field Length - n8	**15D**	Expiration Date (DDMMYYYY)
Field Length - n8	**16D**	Production Date (YYYYMMDD)
Field Length - n8	**17D**	Production Date (DDMMYYYY)
	18D – 19D	Reserved
	20D	Inspection Date (DDMMMYYYY)
	21D	Required Delivery Date (DDD Julian) or DOD MILSTAMP Code
	22D	Record Date Time Stamp (YYYYMMDDTTTT) where T equals hour and minutes

[3] Mutually Defined Significance

	23D	Date, represented in modified UTC compliant form: yyyy[mm[dd[hh[mm[ss[fff]]]]]][poooo] where square brackets indicate optionality and yyyy is the year, mmdd the month and day, hhmmss the time of day in hours minutes and seconds, fff the fractions of sections and poooo the offset from UTC expressed in hours and minutes, the offset being positive if p is a point (.), negative if P is a minus sign (-). EXAMPLE: 2005 (UTC) calendar year 2005 200505 (UTC) calendar month May 2005 20050518 (UTC) 18 May 2005 200505181247 12:47 UTC on 18 May 2005 200505181247.0100 12:47 local time, being 11:47 UTC, on 18 May 2005 20050518124723099 99 milliseconds after UTC 12:47:23 on 18 May 2005
	24D	Qualified date, comprising the concatenation of: — an ISO/IEC 15459 issuing agency code; — a date qualifier conforming to the specifications of that issuing agency; — a date whose format and interpretation comply with the specifications of the issuing agency for that date qualifier
	25D – 999D	Reserved
CATEGORY 5:	**Environmental Factors**	
Allocation:	**E - 999E**	
Field Length – a.2	**E**	Restricted Substances Classification – “Environmental Classification Code” including Lead-Free (Pb-Free) finish categories defined in JESD97 (IPC JEDEC J-STD-609), and future industry or governmental agency assigned codes related to environmental regulatory compliance and hazardous material content
	1E	Air pressure – (altitude) expressed in Pascal’s as the standard international measure
	2E – 9E	Reserved
	10E	Cumulative Time Temperature index – expressed as the number of measurements or counts
	11E	Time Temperature Index – Next Higher Assembly – expressed as the number of measurements or counts
Assigned:	**12E – 999E**	Reserved
CATEGORY 6:	**Looping**	
Allocation:	**F - 999F**	
Assigned:	**F**	Looping Header as defined as Section VI of this document
	1F	My “parent” is . . . (for use with returnable packaging)
	2F	My “children” are . . . (for use with returnable packaging)
	3F	I have _____ children . . . (for with for returnable packaging)
	4F – 999F	Reserved
CATEGORY 7:	**Reserved**	
Allocation:	**G - 999G**	
Assigned:	**G - 999G**	Reserved

CATEGORY 8:	**Human Resources**	
Allocation:	**H - 999H**	
Assigned:	**H**	Reserved
	1H	Employee Identification Code assigned by employer
Field Length - n9	**2H**	U.S. Social Security Number
	3H	ID Number for non-employee (internally assigned or mutually defined) (e.g., contract workers, vendors, service, and delivery personnel)
	4H	National Social Security Number
	5H	Last Name
	6H – 9H	Reserved
	10H	Personal Identification Code (first initial, Last initial, last four of SSN)
	11H	First name and middle initial
Field Length – an2	**12H**	Military Grade (E1-E9, W1-W5, and O1-O10)
	13H – 999H	Reserved
CATEGORY 9:	**Reserved**	
Allocation:	**I - 999I**	
Assigned:	**I**	Exclusive Assignment - Vehicle Identification Number (VIN) as defined in the U.S. under 49 CFR, §§ 565 and internationally by ISO 3779. (These are completely compatible data structures)
	1I	Reserved
	2I	Abbreviated VIN Code
	3I	Reserved – Prior assignment
	4I - 999I	Reserved - Not recommended for use due to similarity of "1" to "I"
CATEGORY 10:	**License Plate**	
Allocation:	**J - 999J**	
Assigned:	**J**	Unique license plate number[Note 4]
Field Length – an..35		
Field Length – an..35	**1J**	Unique license plate number* assigned to a transport unit which is the lowest level of packaging, the unbreakable unit
Field Length – an..35	**2J**	Unique license plate number* assigned to a transport unit which contains multiple packages
Field Length – an..35	**3J**	Unique license plate number* assigned to a transport unit which is the lowest level of packaging, the unbreakable unit and which has EDI data associated with the unit
Field Length – an..35	**4J**	Unique license plate number* assigned to a transport unit which contains multiple packages and which is associated with EDI data
Field Length – an..20	**5J**	Unique license plate number* assigned to a mixed transport unit containing unlike items on a single customer transaction and may or may not have associated EDI data.
Field Length – an..20	**6J**	Unique license plat number* assigned to a master transport unit containing like items on a single customer transaction and may or may not have associated EDI data.
	7J	Vehicle Registration License Plate Number (not unique without identification of country and issuing governmental region/authority)[5]
	8J – 999J	Reserved

[4] For a license plate number to be unique world wide requires: 1) A unique number assigned by the trading partner, 2) A unique code assigned to the trading partner by an organization, and 3) A unique code providing global identification of the assigning organization. ISO/IEC 15459-1:1999 describes the format and usage of these Data Identifiers.

[5] The format of "7J" is such that while a Vehicle Registration License Plate Number may, in practice, be unique within a governmental sub-division, it may not be unique worldwide without having met the requirements of items 2 and 3 of Note 3, above.

CATEGORY 11: **Transaction Reference Used In Trading Relationships**

Allocation: **K - 999K**

Assigned:

K	Order number assigned by Customer to identify a Purchasing Transaction (e.g., purchase order number)
1K	Order number assigned by Supplier to identify a Purchasing Transaction
2K	Bill of Lading/Waybill/Shipment Identification Code assigned by Supplier/Shipper
3K	Bill of Lading/Waybill/Shipment Identification Code assigned by Carrier
4K	Line number of the order assigned by Customer to identify a Purchasing Transaction (See Annex C.9)
5K	Reference number assigned by the Customer to identify a Shipment Authorization (Release) against an established Purchase Order
6K	PRO# Assigned by Carrier
7K	Carrier Mode in Free Text format mutually defined between Customer and Supplier (e.g., Air, Truck, Boat, Rail)
8K	Contract Number
9K	Generic Transaction Reference Code (internally assigned or mutually defined)
10K	Invoice Number
11K	Packing List Number
12K	SCAC (Standard Carrier Alpha Code) (an4 - dash "-" filled left) and carrier assigned PROgressive number
13K	Reserved
14K	Combined Order Number and Line Number in the format nn...nn+nn...n where a plus symbol (+) is used as a delimiter between the Order Number and Line Number
15K	KANBAN Number
16K	DELINS Number: code assigned to identify a document which contains delivery information
17K	Check Number
18K	Structured Reference (See Annex C.10)
19K	Foreign Military Sales Case Number
20K	License identifier, being a globally unique identifier for a license or contract under which items are generated, submitted for processing and/or paid for, that is constructed by concatenating: — an ISO/IEC 15459 issuing agency code; — a license or contract number which accords with specifications of the issuing agency concerned; and that: — comprises only upper case alphabetic and/or numeric characters; — is unique (that is, is distinct from any other ISO/IEC 15459 compliant identifier) within the domain of the issuing agency[6]; — cannot be derived from any other ISO/IEC 15459 compliant identifier, issued under the same issuing agency, by the simple addition of characters to, or their removal from, its end[6].

Field Length - an4 + an. . . 25

[6] 20K license identifiers, 26S equipment identifiers and, subject to certain conditions, 18V party identifiers can be used as the root component of 26T batch identifiers and of ISO/IEC 15459 transport unit identifiers. To ensure uniqueness of the latter, it is essential that such identifiers differ not only from all other identifiers of the same class, but also from all other identifiers of other classes. That is, the specifications of the issuing agency concerned are required to ensure that a 20K license identifier is distinct both from other 20K license identifiers and from 26S equipment identifiers, 18V party identifiers, license plates, etc. Since component-based transport unit identifiers are constructed by simple concatenation, it is also required that one root component cannot be derived from another by adding characters to it.

	21K	Customer data, being data that: — from a customer perspective, is related to or associated with an item or transaction, or to a batch or related items or transactions, and — comprises up to 35 printable characters and/or spaces, other than plus (+), drawn from the character set defined in ISO/IEC 646.
	22K	"22K" Transaction authentication information, being a value, constructed by concatenating: — an ISO/IEC 15459 issuing agency code; — a value which accords with specifications of the issuing agency concerned, that allows verification of the authenticity of the transaction concerned and, in particular, that the transaction was initiated by the party, claimed within the transaction to have been its initiator, by: — the recipient of a transaction, and/or — one or more of the parties involved in its handling or processing, and/or — a trusted third party.
	23K – 24K	Reserved
	25K	Global unique identification of groupings of transport units assigned by the carrier, defined as: Identification of a Party to a Transaction as identified in 18V, followed by the Bill of Lading or Waybill or Shipment Identification Code assigned by that party.
	26K	Global unique identification of groupings of transport units assigned by the shipper, defined as: Identification of a Party to a Transaction as identified in 18V, followed by the Bill of Lading or Waybill or Shipment Identification Code assigned by that party.
	27K – 999K	Reserved

CATEGORY 12:	**Location Reference**	
Allocation:	**L - 999L**	
Assigned:	**L**	Storage Location
	1L	Location
	2L	"Ship To:" Location code defined by an industry standard or mutually defined
	3L	"Ship From:" Location code defined by an industry standard or mutually defined
	4L	Country of Origin, two-character ISO 3166 country code. ***With agreement of trading partners and when the Country of Origin is mixed, Country Code "AA" shall be used.***
	5L	"Ship For:" Location code defined by an industry standard or mutually defined
	6L	Route Code assigned by the supplier to designate a specific transportation path
Field Length - an6	**7L**	6-character Department of Defense Activity Code (DoDAAC)
	8L	Port of Embarkation – Mutually defined
	9L	Port of Debarkation – Mutually defined
	10L – 19L	Reserved

The following DIs can be used to provide for Location identification, which is different than or in addition to Location Reference provided by "L".

	20L	First Level (internally assigned)

	21L	Second Level (internally assigned)
	22L	Third Level (internally assigned
	23L	Fourth Level (internally assigned)
	24L	Fifth Level (internally assigned)
Field Length – an..35	**25L**	Identification of a party to a transaction as identified in 18V, followed by an internal physical location of and assigned by the party identified in 18V, e.g., 25L IAC CIN LOC, where the IAC is the issuing agency code assigned by the ISO 15459-2 Registration Authority, the CIN is the company identification code assigned by the IAC, and the LOC is the physical internal location assigned by the CIN.
	26L	"26L" Location code, being a code identifying a location or geographic area, or an associated group of such locations or areas, that has relevance to a related transaction and that complies with **one** or the structures defined in (a) to (f) below: a) two upper case alphabetic character corresponding to the ISO 3166-1 two alpha country code of the country in which, or consisting of which, the location(s) or area(s) are situated; b) three upper case alphabetic characters corresponding to the IATA code of the airport or city in, close to, or consisting of which the location(s) or area(s) are situated; c) four or more characters of which the first three correspond to an ISO 3166-1 country code followed by a dash (-), with the balance being a postcode in the country concerned; d) four or more characters of which the first three correspond to an ISO 3166-1 country code followed by a dot (.), with the balance being an ISO 3166-2 country subdivision code in the country concerned; e) five upper case alphabetic characters corresponding to the UN/LOCODE of the area in, close to, or consisting of which, the location(s) or area(s) are situated; f) the concatenation, being not less than seven or more than 35 characters in length, of: — an ISO/IEC 15459 issuing agency code; — a location code, consisting of characters drawn form the set {A-Z; 0-9} which accords with specifications of the issuing agency concerned.
	27L – 50L	Reserved

The following two Data Identifiers are to be used for shipments within the jurisdiction of a single postal authority.

	51L	"Ship From:" - Location code defined by a postal authority (e.g., 5-digit and 9-digit ZIP codes identifying U.S. locations or 6-character postal codes identifying Canadian locations)
	52L	"Ship To:" - Location code defined by a postal authority (e.g., 5-digit and 9-digit ZIP codes identifying U.S. locations or 6-character postal codes identifying Canadian locations)
	53L	Reserved

The following two Data Identifiers are to be used for shipments between locations governed by different postal authorities

	54L	"Ship From:" - Location code defined by a postal authority in the format: postal codes (e.g., 5-digit ZIP codes identifying U.S. locations or 6- or 7-character postal codes identifying United Kingdom locations) followed by two character ISO 3166 country code (e.g., US or GB)
	55L	"Ship To:" - Location code defined by a postal authority in the format: postal codes (e.g., 5-digit ZIP codes identifying U.S. locations or 6-

		or 7-character postal codes identifying United Kingdom locations) followed by two character ISO 3166 country code (e.g., US or GB)
	56L - 999L	Reserved
CATEGORY 13:	**Reserved**	
Allocation:	**M - 999M**	
Assigned:	**M**	Reserved
	1M – 9M	Reserved
	10M	Army form 2410 data. Format is data value preceded by the block number of the form 2410. Field lengths and acceptable characters can be found at http://www.apd/army.mil/pdffiles/p738_751.pdf
	11M	Army form 2408 data. Format is data value preceded by the block number of the form 2408. Field lengths and acceptable characters can be found at http://www.apd/army.mil/pdffiles/p738_751.pdf
	12M	Army form 2407 data. Format is data value preceded by the block number of the form 2407. Field lengths and acceptable characters can be found at http://www.apd/army.mil/pdffiles/p738_751.pdf
	13M	Air Force Form 95 data. Format is data value preceded by the block number of the form 95. Field lengths and acceptable characters can be found at http://www.abqbetty.com/Logistics?00-20-5.pdf
	14M	Navy Form 4790 data. Format is data value preceded by the block number of the form 2410. Field lengths and acceptable characters can be found at http://tpub.com/content/aviation/12324/
	15M – 999M	Reserved
CATEGORY 14:	**Industry Assigned Codes**	
Allocation:	**N - 999N**	
Assigned:	**N**	National/NATO Stock Number (NSN)
Field Length – an13..15		
	1N	Product Characteristic Data defined by the Chemical Industry Data Exchange (CIDX)
	2N	Reserved
	3N	Coding Structure in Accordance with Format Defined by Electronic Industries Association Japan (EIAJ)
	4N	Coding Structure and Formats in Accordance with GS1 Application Identifiers (AI plus data) (GS1)
	5N	Coding Structure and Formats in Accordance with AIAG Recommendations. The full Data Identifier is in the form 5Nxx where the “xx” is found in the full code list that can be found at http://www.autoid.org/ANSI_MH10_SC8/5N_DI_Table/5N_DI_Table.htm
	6N	U.S. DOD Requisition and Issue Procedure Codes. The format is the MILSTRIP code the appropriate followed by the data value associated with that code. (The full list of codes is available at http://www.dla.mil/j6/dlmso/eLibrary/Manuals/MILSTRIP/Reissue2004/MILSTRIPfileformats.asp in Appendix 2
	7N	U.S. Defense Transportation Regulation codes. The format is the DTR code followed by the appropriate data value associated with that code. (The full list of codes is available at http://www.transcom.mil/j5/pt/dtr_part_ii.html in appendices Y through YY)
	8N	Production animal identification codes. The format is the production animal code followed by the appropriate data value associated with that code. (The full list of codes is maintained at the website

		http://www.aimglobal.org/)
	9N – 999N	Reserved
CATEGORY 15:	**Reserved**	
Allocation:	**O - 999O**	
Assigned:	**O - 999O**	Not recommended for use due to similarity of "0" (zero) to "O"
CATEGORY 16:	**Item Information**	
Allocation:	**P - 999P**	
Assigned:	**P**	Item Identification Code assigned by Customer
	1P	Item Identification Code assigned by Supplier
	2P	Code assigned to specify the revision level for an Item (e.g., engineering change level, edition, or revision)
Field Length – n13..14	**3P**	Combined manufacturer identification code/item code under the 12/13-digit GS1 formats, plus supplemental codes, if any
	4P	Item Code portion of GS1 formats
	5P	Freight Classification Item Number assigned by Carrier for purposes of rating hazardous materials (e.g., Motor Freight, Air, Boat, Rail Classification)
	6P	Combined supplier identification and item code (internally assigned or mutually defined)
	7P	Common Language Equipment Identification (CLEI) assigned by the manufacturer to some telecommunications equipment
Field Length – n14	**8P**	14-digit GS1 format for GTIN-14 code structure
	9P	Combined manufacturer identification code (9-digit DUNS number assigned by Dun & Bradstreet) and the item code/part number (assigned by the manufacturer).
	10P	Hazardous Material Code as defined by ANSI X12.3 in the format Data Element 208 (1-character code qualifier) followed by Data Element 209 (Hazardous Material Code)
Field Length – an10	**11P**	10-character CLEI Code for telecommunications equipment
	12P	Document Type (e.g., Pick List, Design Drawing, etc.) (internally assigned or mutually defined)
	13P	VMRS System Code
	14P	VMRS System and Assembly Code
	15P	VMRS System, Assembly, & Part Code
	16P	VMRS System, Assembly, or Part Code (User Modified
	17P	Combined GS1 supplier identification and item code assigned by the supplier
	18P	Combined VMRS supplier ID and supplier assigned part number
	19P	Component of an Item (One product contained in multiple packages)

The following five DIs can be used to provide for Item identification (Item ID), which is different than or in addition to Item ID provided by "P".

	20P	First Level (Customer Assigned)
	21P	Second Level (Customer Assigned)
	22P	Third Level (Customer Assigned)
	23P	Fourth Level (Customer Assigned
	24P	Fifth Level (Customer Assigned
	25P	Identification of a party to a transaction as identified in 18V, followed by the supplier assigned part number.
	26P	Part Number of next higher assembly
	27P – 29P	Reserved

The following five DIs can be used to provide for Item identification (Item ID), which is different than or in addition to Item ID provided by "1P".

	30P	First Level (Supplier Assigned)
	31P	Second Level (Supplier Assigned)

	32P	Third Level (Supplier Assigned)
	33P	Fourth Level (Supplier Assigned
	34P	Fifth Level (Supplier Assigned
	35P – 39P	Reserved
	40P	A code assigned by a customer to the identification number of the manufacturer's Material Safety Data Sheet (MSDS) document that describes the uses, hazards, and chemical composition of a hazardous material.
	41P – 49P	Reserved
Field Length – an3…35	**50P**	Manufacturer-assigned item identifier - Manufacturer-assigned item identifier comprising an item number assigned by the item manufacturer, followed by a plus (+) sign, followed - if required to uniquely identify the item within the manufacturer's product range - by a manufacturer-assigned item version. {Example 50PABC+6 would represent item number ABC, item version 6 Note: The item number shall always be followed by a plus sign, even if no item version is present. This is required to permit the unambiguous concatenation of manufacturer-assigned item identifier with another data construct using the concatenation character plus (+). For example, the combination of a 50P manufacturer-assigned item identifier with no item version and a serial number (Data identifier S) on an entity might be encoded as 50PDEF++S1234}
	51P	Globally unique item identifier comprising the Identification of a party to a transaction as identified in 18V, followed by a plus (+) sign, followed by the Manufacturer-assigned item identifier as defined with 50P {Example: 51PJ4LBE0431863103+ABC+ would represent the item with item number ABC and no version number manufactured by the company with Belgian VAT number 0431863103}
	52P - 999P	Reserved

CATEGORY 17: **Measurement**

Allocation: **Q - 999Q**

If decimal points are to be used, they should be included within the data.

Assigned:	**Q**	Quantity, Number of Pieces, or Amount (numeric only) (unit of measure and significance mutually defined
	1Q	Theoretical Length/Weight (numeric only)
	2Q	Actual Weight (numeric only)
an2	**3Q**	Unit of Measure, as defined by the two character ANSI X12.3 Data Element Number 355 Unit of Measurement Code
	4Q	Gross Amount
	5Q	Net Amount
	6Q	Where multiple containers comprise a single product (the contents of each container must be combined with the content of the other containers to constitute a single product) the Data Identifier “6Q” shall be used to link the various containers. The format # of # (“this is the nth piece of x pieces to define the product”) Presented in the format “n/x”, where the “/” (slash) is used as a delimiter between two values.
	7Q	Quantity, Amount, or Number of Pieces in the format: Quantity followed by the two character ANSI X12.3 Data Element Number 355 Unit of Measurement Code
	8Q	Reserved
	9Q	Piece Weight: weight of a single item
	10Q	Reserved
	11Q	Tare Weight: weight of an empty container
	12Q	Monetary Value established by the Supplier in the format of: the value followed by an ISO 4217 data element code for representing unit of value of currencies and funds (e.g., 12Q2.50USD) (2.50 Monetary Value in USA Dollars) significance mutually defined
	13Q	# of # ("this is the *nth* piece of *x* pieces in this shipment") Presented in the format "*n/x*", where the "/" (slash) is used as a delimiter between two values. See Annex C.6.3 for further information
	14Q	Beginning Secondary Quantity
	15Q	Ending Secondary Quantity
	16Q	Number of pieces in Van
	17Q	Number of shipments in van
	18Q	Cube expressed in cubic meters or cubic feet followed by the ANSI X12.3 data element number 355 unit of measure code (CR of CF). No implied decimal point.
	19Q	Width expressed in linear meters or linear feet followed by the ANSI X12.3 data element number 355 unit of measure code (LC or LF). No implied decimal point.
	20Q	Height expressed in linear meters or linear feet followed by the ANSI X12.3 data element number 355 unit of measure code (LC or LF). No implied decimal point.
	21Q	Length expressed in linear meters or linear feet followed by the ANSI X12.3 data element number 355 unit of measure code (LC or LF). No implied decimal point.
	22Q	Net weight of shipment expressed in pounds or kilograms (kilos) followed by the ANSI X12.3 data element number 355 unit of measure (LB or KG). No implied decimal point.
	23Q	Van length expressed in linear meters or linear feet followed by the ANSI X12.3 data element number 355 unit of measure (LC or LF). No implied decimal point.
	24Q	Inside cube of a van expressed in cubic meters or cubic feet followed

		by the ANSI X12.3 data element number 355 of unit measure code (CR or CF). No implied decimal point.
	25Q	Net explosive weight (a computed value of explosive equivalent expressed in pound of TNT). The measure of NEW is used internationally for explosive safety quantity distance arc computations. No implied decimal point.
	26Q	Packaging Level, specifying the hierarchical level of packaging in accordance with HIBC (Health Industry Bar Code) specifications
	27Q – 999Q	Reserved
CATEGORY 18:	**Miscellaneous**	
Allocation:	**R - 999R**	
Assigned:	**R**	Reserved
	1R	Return Authorization Code (RMA) assigned by the Supplier
	2R	Return Code assigned by the Customer
	3R	Reserved
Field Length – an4	**4R**	U.S. Department of Defense Identification Code (DoDIC)
	5R - 999R	Reserved
CATEGORY 19:	**Traceability Number for an Entity**	
Allocation:	**S - 999S**	
Assigned:	**S**	Serial number or code assigned by the Supplier to an entity for its lifetime, (e.g., computer serial number, traceability number, contract tool identification)
	1S	Additional code assigned by the Supplier to an entity for its lifetime (e.g., traceability number, computer serial number)
Field Length – an2..30	**2S**	Advance Shipment Notification (ASN) Shipment ID (SID) corresponds to ANSI ASC X12 Data Element 396
	3S	Unique Package Identification assigned by Supplier (lowest level of packaging which has a package ID code; shall contain like items)
	4S	Package Identification assigned by Supplier to master packaging containing like items on a single customer order (See Annex C.7)
	5S	Package Identification assigned by Supplier to master packaging containing unlike items on a single customer order (See Annex C.7)
	6S	Package Identification assigned by Supplier to master packaging containing like items over multiple customer orders (See Annex C.7)
	7S	Package Identification assigned by Supplier to master packaging containing unlike items over multiple customer orders (See Annex C.7)
Field Length – n18	**8S**	Supplier ID/Unique Container ID presented in the data format specified by the GS1 SSCC-18
	9S	Package Identification, Generic (mutually defined)
	10S	Machine, cell, or tool ID code
	11S	Fixed asset ID code
	12S	Document Number (internally assigned or mutually defined)
	13S	Container Security Seal
	14S	4th Class Non-identical parcel post manifesting
	15S	Serial Number Assigned by the Vendor Entity, that can only be used in conjunction with "13V"
	16S	Version Number, e.g., Software Version
	17S	Combined 6-digit GS1 supplier identification and unique package identification assigned by the supplier
Field Length – an5 + an..20[7]	**18S**	CAGE Code & Serial Number unique within CAGE

[7] For the purposes of DI 18S, the characters dash "-" and slash "/" are part of the allowable character set.

	19S	Combined Dun & Bradstreet company identification of the supplier followed by a unique package identification assigned by the supplier, in the format nn...nn+nn...n where a plus symbol (+) is used as a delimiter between the DUNS Number and unique package identification
	20S	Traceability code for an entity assigned by the customer
	21S	Combined U.S. D.O.T. Tire Manufacturer Plant Code and unique tire identification assigned by the supplier
	22S	Electronic Serial Number for Cellular Mobile Telephones
Field Length – an12	**23S**	Media Access Control (MAC) Address conforming with IEEE 802.11
	24S	Reserved
	25S	Identification of a party to a transaction as identified in 18V, followed by the supplier assigned serial number.
	26S	Equipment identifier, being a globally unique identifier for a device, an item of equipment or instance of a computer application used in the production, transport, processing or other handling of items, that is constructed by concatenating: — an ISO/IEC 15459 issuing agency code; — an equipment number which accords with specifications of the issuing agency concerned; and that: — comprises only upper case alphabetic and/or numeric characters; — is unique (that is, is distinct from any other ISO/IEC 15459 compliant identifier) within the domain of the issuing agency[6]; — cannot be from any other ISO/IEC 15459 compliant identifier, issued under the same issuing agency, by the simple addition of characters to, or their removal from, it end[6].
	27S	Item number within batch, being a string of numeric digits: — that uniquely distinguishes an item, within an identifiable batch of related items, from all other items in the same batch; — whose length is the same for all items within the batch concerned.
	28S	Batch-and-item number, being the concatenation of a data identifier 27T batch number and the data identifier 27S item number of an item belonging to the batch concerned.
	29S	Reserved
	30S	Additional traceability code for an entity assigned by the supplier in addition to or different from the traceability code(s) provided by "S" or "1S"
	31S	Beginning Serial Number for serial numbers in sequence
	32S	Ending Serial Number for serial numbers in sequence
	33S	Serial number of Next higher assembly
	34S	Serial number or Part number of End Item
	35S	Bumper Number (Used in Unit DOD Move)
	36S	Pallet Identifier (Used for loaded 463L air pallets)
	37S - 49S	Reserved

The following five DIs can be used to provide for identification of entities within a single unit that is different than or in addition to identification provided by "S".

Field Length – an..20	**50S**	First Level (Supplier Assigned)
Field Length – an..20	**51S**	Second Level (Supplier Assigned)
Field Length – an..20	**52S**	Third Level (Supplier Assigned)
Field Length – an..20	**53S**	Fourth Level (Supplier Assigned
Field Length – an..20	**54S**	Fifth Level (Supplier Assigned
	55S - 95S	Reserved

Field Length – b96	**96S**	96-bit EPC data structure (EPCglobal)
Field Length – an4..25	**97S**	Encrypted serial number assigned by the Supplier to an entity, which can be authenticated by an independent trusted third party. The encrypted serial number does not describe any parameters of the entity without decryption by an independent third party.
	98S – 999S	Reserved

CATEGORY 20: Traceability Number for Groups of Entities

Allocation: **T - 999T**

Assigned:	**T**	Traceability Number assigned by the Customer to identify/trace a unique group of entities (e.g., lot, batch, heat)
	1T	Traceability Number assigned by the Supplier to identify/trace a unique group of entities (e.g., lot, batch, heat)
	2T	Reserved
	3T	Exclusive Assignment (U.S. EPA vehicle identification for emissions testing)
	4T - 19T	Reserved

The following five DIs can be used to provide for identification of a group of entities, which is different than or in addition to identification provided by "T".

20T	First Level (Customer Assigned)
21T	Second Level (Customer Assigned)
22T	Third Level (Customer Assigned)
23T	Fourth Level (Customer Assigned
24T	Fifth Level (Customer Assigned
25T	Identification of a party to a transaction as identified in 18V, followed by the supplier assigned traceability number.

26T	Batch identifier comprising the concatenation of either:
	— a data identifier 26S mail processing equipment identifier, or
	— a data identifier 20K license identifier, or
	— a data identifier 18V party identifier that:
	  — is distinct from any other ISO/IEC 15459 compliant identifier within the domain of the issuing agency concerned[6];
	  — cannot be derived from another party identifier or any other ISO/IEC 15459 compliant identifier, issued under the same issuing agency, by the simple addition of characters to, or their removal from, its end[6];
	with a data identifier 27T batch number, the two being separated by a dash (-) character[8].

27T	Batch number, issued under the control of an identified party or unit of processing equipment, or under the provisions of an identified license, that: — uniquely distinguishes one batch of related items from all other batches to which a batch number is assigned by the party or equipment, or under the license, concerned; — comprises a string of maximum length 10 characters, of which the first (numeric) character indicates the number of following characters, each of which is taken from the set {0-9; A-Z}
28T – 29T	Reserved

The following five DIs can be used to provide for identification of a group of entities, which is different than or in addition to identification provided by "1T".

30T	First Level (Supplier Assigned)

[8] Note that the dash character cannot occur in either of the two components and can thus be used to support decomposition of the batch identifier into these components. A transport unit identifier constructed from the same two components and a “27S” item number contains no such separator and cannot be decomposed.

	31T	Second Level (Supplier Assigned)
	32T	Third Level (Supplier Assigned)
	33T	Fourth Level (Supplier Assigned)
	34T	Fifth Level (Supplier Assigned)
	35T - 999T	Reserved
CATEGORY 21:	**UPU/MH 10/SC8 Agreed Upon Codes**	
Allocation:	**U - 999U**	
Assigned:	**U-4U**	Reserved
	5U	Specification of a postal service and associated process data in accordance with UPU standard S25 data construct “Service Data”
	6U	Licensing post data, in accordance with the specification in UPU standard S25.
	7U – 14U	Reserved for Assignment for UPU needs in collaboration with ASC MH10/SC 8/WG 2
	15U	Specification of supplementary postal service and associated process data in accordance with UPU standard S25 data construct “Supplementary Service Data”.
	16U	Postal administration identifications, being the identification, expressed in accordance with the specification in UPU standard S25, of one or more postal administrations involved in the processing of a mail item or batch.
	17U	UPU location code, being a code identifying a location or geographic area, or an associated group of such locations or areas, that has relevance to a related transaction and that complies with one of the structures defined in a) to g) below: a) two upper case alphabetic characters corresponding to the ISO 3166-1 two alpha country code of the country in which, or consisting of which, the location(s) or area(s) are situated; b) three upper case alphabetic characters corresponding to the IATA code of the airport or city in, close to, or consisting of which the location(s) or area(s) are situated; c) four or more characters of which the first three correspond to an ISO 3166-1 country code followed by a dash (-), with the balance being a postcode in the country concerned; d) four or more characters of which the first three correspond to an ISO 3166-1 country code followed by a dot (.), with the balance being an ISO 3166-2 country subdivision code in the country concerned; e) five upper case alphabetic characters corresponding to the UN/LOCODE of the area in, close to, or consisting of which, the location(s) or area(s) are situated; f) six upper case alphanumeric characters corresponding to a UPU IMPC code allocated in accordance with UPU standard S34; g) the concatenation, being not less than seven nor more than 25 characters in length, of: — an issuer code allocated in accordance with UPU standards S31; — a location code, consisting of characters drawn from the set {A-Z; 0-9} which accords with specifications of the issuer concerned.
	18U	Qualified UPU location code, concatenation of: — a location category drawn from UPU code list 139; — a data identifier 17U UPU location code
	19U	License plate with service data and location code is a compound data construct, compliant with the specification in UPU standard S25,

		which includes specification of: — an ISO/IEC 15459-compliant item identifier; — a data identifier 5U compliant specification of the service to be provided in respect of the item; — a data identifier 17U compliant UPU location code or a data identifier 18U compliant qualified UPU location code. *Note: For further details, please refer to UPU standard S25. The distinction between a simple UPU location code (DI 17U) and a qualified UPU location code (DI 18U) can be determined from the first character. If this is numeric, 18U applies; if it is alphabetic, 17U applies.*
	20U – 54U	Reserved for Assignment for UPU needs in collaboration with ASC MH 10/SC 8/WG 2
	55U	OCR Data Locator
	56U – 999U	Reserved

CATEGORY 22:	**Party To The Transaction**	
Allocation:	**V - 999V**	
Assigned:	**V**	Supplier Code assigned by Customer
	1V	Supplier Code assigned by Supplier
Field Length – n6	**2V**	6-digit Company Code as assigned by the GS1 US
	3V	Fabricator Code as assigned by the appropriate GS1 authority
	4V	Carrier Identification Code assigned by an industry standard mutually defined by the Supplier, Carrier, and Customer
	5V	Financial Institution Identification Code (mutually defined)
	6V	Manufacturer's identification code (mutually defined
	7V	Code assigned to a party which has financial liability for an entity or group of entities (e.g., owner of inventory) (mutually defined)
	8V	Customer code assigned by the customer
	9V	Customer code assigned by the supplier
	10V	Reserved
	11V	Organization with budget responsibility for an entity, process, or procedure (e.g., shop, division, department)(internally assigned)
Field Length – n9..13	**12V**	DUNS number identifying manufacturer
Field Length – n9..13	**13V**	DUNS number identifying supplier
Field Length – n9..13	**14V**	DUNS number identifying customer
	15V	Carrier-assigned shipper number
	16V	VMRS Supplier ID
Field Length – an5	**17V**	U.S. DoD CAGE Code
	18V	Identification of a party to a transaction in which the data format consists of two concatenated segments. The first segment is the unique code assigned to an issuing agency by NEN in accordance with ISO/IEC 15459, the second segment is a unique entity identification assigned in accordance with rules established by the issuing agency (see http://www.nen.nl/nl/pro/line-/ISOIEC15459_and_EN1572_guide.html)
	19V	Specification of a party's role(s), in a transaction, consisting of one or more code values from EDIFACT Code List 3035 "Party Qualifier", separated by plus (+) characters (Never to be concatenated with other DIs in a linear symbol or other media where the concatenation character is a plus (+) character)
	20V	Identification of a party to a transaction as identified in 18V, followed by a plus (+) character followed by one or more code values from EDIFACT Code List 3035 "Party Qualifier", separated by plus (+) characters (Never to be concatenated with other DIs in a linear symbol or other media where the concatenation character is a plus (+) character)
Field Length – an..35	**21V**	Identification of a party to a transaction as identified in 18V, followed

		by the organizational sub-unit of and assigned by the party identified in 18V, e.g., 21V IAC CIN OSU, where the IAC is the issuing agency code assigned by the ISO 15459-2 Registration Authority, the CIN is the company identification code assigned by the IAC, and the OSU is the organizational sub-unit identification assigned by the CIN.
	22V – 999V	Reserved
CATEGORY 23:	**Activity Reference**	
Allocation:	**W - 999W**	
Assigned:	**W**	Work Order Number (e.g., "Production Paper") (internally assigned)
	1W	Operation Sequence Number
	2W	Operation Code/Work Code - the type of work to be performed (internally assigned or mutually defined)
	3W	Combined Work Order Number and Operation Sequence Number in the format nn...n+nn...n where a plus symbol (+) is used as a delimiter between the Work Order Number and the Operation Sequence Number
	4W	Status Code (internally assigned or mutually defined)
	5W	Work Unit Code – identifies system, subsystem, assembly, component etc. on which maintenance is performed
	6W	Nomenclature – (internally assigned or mutually defined)
	7W – 9W	Reserved
	10W	Form Control Number – Preprinted control number on forms
	11W	Quality Assurance Inspector – Last Name
	12W	Telephone number of the person/activity completing the form – expressed in the format (country code) city or area code plus local number i.e. (1) 319 555 1212
	13W – 999W	Reserved
CATEGORY 24:	**Reserved**	
Allocation:	**X - 999X**	
Assigned:	**X - 999X**	Reserved
CATEGORY 25:	**Internal Applications**	
Allocation:	**Y - 999Y**	
Assigned:	**Y - 999Y**	Never to appear on item/document which leaves a closed system environment
CATEGORY 26:	**Mutually Defined**	
Allocation:	**Z - 999Z**	
Assigned:	**Z**	Mutually Defined between Customer and Supplier
	1Z	Mutually Defined between Carrier and Supplier
	2Z	Mutually Defined between Customer and Carrier
	3Z	Free Text
	4Z	Mutually Defined between Carrier and Trading Partner
	5Z - 9Z	Reserved
	10Z	Structured Free Text (Header Data)
	11Z - 99Z	Structured Free Text (Line 1-89 Data)
	100Z - 999Z	Reserved

SECTION II
GS1 APPLICATION IDENTIFIERS
(AIs)

The AIs listed in Section II of this standard represent the assignments made through December 2009. Those wishing further information should contact the GS1 for the current list of AI assignments and relevant standards. Those requesting new AI assignments should use the GS1 Application Identifier Standard Request Form attached to this document.

GS1 Application Identifiers as of 1 January 2005

AI	Data Content	Format
00	Serial Shipping Container Code (SSCC)	n2+n18
01	Global Trade Item Number (GTIN) (f.k.a. SCC-14)	n2+n14
02	GTIN of trade items contained in a logistic unit (Must be used with AI 37)	n2+n14
10	Batch or Lot Number	n2+an...20
11 (*)	Production Date (YYMMDD)	n2+n6
12 (*)	Due Date (YYMMDD)	n2+n6
13 (*)	Packaging Date (YYMMDD)	n2+n6
15 (*)	Minimum Durability Date (YYMMDD) (f.k.a. Best Before / Quality)	n2+n6
17 (*)	Maximum Durability Date (YYMMDD) (f.k.a. Use By / Safety)	n2+n6
20	Product Variant	n2+n2
21	Serial Number	n2+an...20
22	HIBCC - Quantity, Date, Batch, and Link	n2+an...29
240	Additional Product Identification Assigned by the Manufacturer	n3+an...30
241	Customer Part Number	n3+an...30
242	Made-to-Order Variation Number	n3+n...6
250	Secondary Serial Number	n3+an...30
251	Reference to Source Entity	n3+an...30
253	Global Document Type Identifier	n3+n13…30
254	GLN Extension component	n3+an..20
30	Variable Count (f.k.a. Quantity)	n2+n...8
310 (***)	Net Weight, Kilograms	n4+n6
311 (***)	Length or 1st Dimension Trade, Meters	n4+n6
312 (***)	Width, Diameter, or 2nd Dimension, Trade, Meters	n4+n6
313 (***)	Depth, Thickness, Height or 3rd Dimension, Trade, Meters	n4+n6
314 (***)	Area, Trade, Square Meters	n4+n6
315 (***)	Net Volume, Liters	n4+n6
316 (***)	Net Volume, Cubic Meters	n4+n6
320 (***)	Net Weight, Pounds	n4+n6
321 (***)	Length or 1st Dimension, Trade, Inches	n4+n6
322 (***)	Length or 1st Dimension, Trade, Feet	n4+n6
323 (***)	Length or 1st Dimension, Trade, Yards	n4+n6
324 (***)	Width, Diameter, or 2nd Dimension, Trade, Inches	n4+n6
325 (***)	Width, Diameter, or 2nd Dimension, Trade, Feet	n4+n6
326 (***)	Width, Diameter, or 2nd Dimension, Trade, Yards	n4+n6
327 (***)	Depth, Thickness, Height or 3rd Dimension, Trade, Inches	n4+n6
328 (***)	Depth, Thickness, Height or 3rd Dimension, Trade, Feet	n4+n6
329 (***)	Depth, Thickness, Height or 3rd Dimension, Trade, Yards	n4+n6
330 (***)	Gross Weight, Kilograms	n4+n6
331 (***)	Length or 1st Dimension, Meters Logistics	n4+n6
332 (***)	Width, Diameter, or 2nd Dimension, Meters Logistics	n4+n6
333 (***)	Depth, Thickness, Height or 3rd Dimension, Meters, Logistics	n4+n6
334 (***)	Area, Square Meters Logistics	n4+n6
335 (***)	Gross Volume, Liters	n4+n6
336 (***)	Gross Volume, Cubic Meters	n4+n6
337 (***)	Kilograms per Square Meter	n4+n6
340 (***)	Gross Weight, Pounds	n4+n6
341 (***)	Length or 1st Dimension, Inches Logistics	n4+n6

AI	Data Content	Format
342 (***)	Length or 1st Dimension, Feet Logistics	n4+n6
343 (***)	Length or 1st Dimension, Yards Logistics	n4+n6
344 (***)	Width, Diameter, or 2nd Dimension, Inches Logistics	n4+n6
345 (***)	Width, Diameter, or 2nd Dimension, Feet Logistics	n4+n6
346 (***)	Width, Diameter, or 2nd Dimension, Yards Logistics	n4+n6
347 (***)	Depth, Thickness, Height or 3rd Dimension, Inches, Logistics	n4+n6
348 (***)	Depth, Thickness, Height or 3rd Dimension, Feet, Logistics	n4+n6
349 (***)	Depth, Thickness, Height or 3rd Dimension, Yards, Logistics	n4+n6
350 (***)	Area, Trade, Square Inches	n4+n6
351 (***)	Area, Trade, Square Feet	n4+n6
352 (***)	Area, Trade, Square Yards	n4+n6
353 (***)	Area, Square Inches, Logistics	n4+n6
354 (***)	Area, Square Feet, Logistics	n4+n6
355 (***)	Area, Square Yards, Logistics	n4+n6
356 (***)	Net Weight, Troy Ounces	n4+n6
357 (***)	Net Volume, Ounces (U.S.)	n4+n6
360 (***)	Net Volume, Quarts	n4+n6
361 (***)	Net Volume, Gallons (U.S.)	n4+n6
362 (***)	Gross Volume, Quarts	n4+n6
363 (***)	Gross Volume, Gallons (U.S.)	n4+n6
364 (***)	Net Volume, Cubic Inches	n4+n6
365 (***)	Net Volume, Cubic Feet	n4+n6
366 (***)	Net Volume, Cubic Yards	n4+n6
367 (***)	Gross Volume, Cubic Inches	n4+n6
368 (***)	Gross Volume, Cubic Feet	n4+n6
369 (***)	Gross Volume, Cubic Yards	n4+n6
37	Count of Trade Items Contained in a Logistics Unit (For Use with AI 02 Only)	n2+n...8
390 (***)	Amount Payable – single monetary area	n4+n..15
391 (***)	Amount Payable – with ISO currency code	n4+n3+n..15
392 (***)	Amount Payable for a Variable Measure Trade Item – single monetary area	n4+n..15
393 (***)	Amount Payable for a Variable Measure Trade Item – with ISO currency code	n4+n3+n..15
+400	Customer's Purchase Order Number	n3+an...30
401	Consignment Number	n3+an...30
402	Shipment Identification Number	n3+n17
403	Routing Code	n3+an..30
410	Ship To (Deliver To) - GS1 Global Location Number	n3+n13
411	Bill To (Invoice To) - GS1 Global Location Number	n3+n13
412	Purchased From - GS1 Global Location Number	n3+n13
413	Ship For - Deliver For - Forward To GS1 Global Location Number	n3+n13
414	Identification of a Physical Location, GS1 Global Location Number	n3+n13
415	GS1 Global Location Number of the Invoicing Party	n3+n13
420	Ship To (Deliver To) Postal Code Within a Single Postal Authority	n3+an...9
421	Ship To (Deliver To) Postal Code With 3-digit ISO Country Code Prefix	n3+n3+an...9
422	Country of Origin of a Trade Item	n3+n3
423	Country of Initial Processing	n3+n…15
424	Country of Processing	n3+n3
425	Country of Disassembly	n3+n3
426	Country covering full process chain	n3+n3

AI	Data Content	Format
7001	NATO Stock Number (NSN)	n4+n13
7002	UN/ECE Meat Carcasses and Cuts Classification	n4+n…30
7003	Expiration Date and Time (YYMMDDHHMM)	n4+n10
703(s)	Approval number of processor with ISO country code	n4+n3…30
8001	Roll products - Width, Length, Core Diameter, Direction, & Splices	n4+n14
8002	Electronic Serial Number for Cellular Mobile Telephones	n4+an...20
8003	Global Returnable Asset Identifier	n4+n14+an...16
8004	Global Individual Asset Identifier	n4+an...30
8005	Price Per Unit of Measure	n4+n6
8006	Identification of the Component of an Article	n4+n14+n2+n2
8007	International Bank Account Number	n4+n18
8008	Date and Time of Production (YYMMDDHHMMSS)	n4+n8…12
8018	Global Service Relation Number	n4+n18
8020	Payment Slip Reference Number	n4+an..25
8100	Coupon Extended Code - Number System Character and Offer	n4+n1+n5
8101	Coupon Extended Code - Number System Character, Offer, and End of Offer	n4+n1+n5+n4
8102	Coupon Extended Code - Number System Character preceded by zero	n4+n1+n1
8110	Coupon Code Identification for Use in North America	n4+an..30
90	Information Agreed Between Trading Partners	n2+an..4+an...26
91	Intra-Company Internal	n2+an...30
92	Intra-Company Internal	n2+an...30
93	Intra-Company Internal	n2+an...30
94	Internal	n2+an...30
95	Internal - Carriers	n2+an...30
96	Internal - Carriers	n2+an...30
97	Intra-Company Internal	n2+an...30
98	Intra-Company Internal	n2+an...30
99	Internal	n2+an...30
DI	Interim Assignment - ANSI MH10.8.2 Data Identifiers (ISO 28219)	n2+an..4+an...26

(*) : To indicate only year and month, DD can be filled with "00"
(**) : Plus one digit for length indication
(***) : Plus one digit for decimal point indication
(+) : The definition of 400 has been modified to allow order, release, and line numbers, at the discretion of the issuer

Date Value Representation:

a	alphabetic characters (chars)	n	numeric chars	an	alphanumeric chars
n3	3 numeric chars, fixed length	an3	3 alpha-numeric chars, fixed length	n...3	up to 3 numeric chars
a...3	up to 3 alphabetic chars	an...3	up to 3 alphanumeric chars	s	sequence in the process

Note: For the purposes of Application Identifiers the allowable character set is the 82 characters comprised of the numeric digits 0-9, the upper case alphabetic characters A-Z, the lower case alphabetic characters a-z, and the special characters ! (exclamation mark), " (quotation mark), % (percent sign), & (ampersand), ' (apostrophe), ((left parenthesis),) (right parenthesis), * (asterisk), + (plus sign), , (comma), - (hyphen/minus), . (full stop), / (solidus), : (colon), ; (semicolon), < (less-than sign), = (equal sign), > (greater-than sign), ? (question mark), and _ (low line).

SECTION III
MAPPING
ANSI MH10.8.2 DIs & GS1 AIs

SECTION III
MAPPING ANSI MH10.8.2 DIs to GS1 AIs

DEFINED CATEGORIES

Editor's Note: The usage of the term "number" below is not intended to be restricted to numeric characters only, but to generically refer to a code structure which may contain numeric and/or alphabetic data. The following Application and Data Identifiers are assigned to the usages described. The usage of any alphabetic, numeric, or special character in a leading position (as a "Data Identifier") not defined herein is reserved for future assignment by the body controlling these guidelines. Unless otherwise specified leading zeroes (0's) are non-significant and not to be employed (e.g., 0A, 00A, 000A, 01A, 011A). References to other ANSI Standards are to the most current version of that standard.

"n/e" means no equivalent.

CATEGORY/DESCRIPTION	ANSI MH10.8.2 DI	GS1 AI
CATEGORY 1: Reserved		
Reserved	**A - 999A**	**n/e**
CATEGORY 2: Container Information		
Container Type (internally assigned or mutually defined)	**B**	**n/e**
Returnable container identification code assigned by the container owner or the appropriate regulatory agency (e.g., a metal tub, basket, reel, unit load device (ULD), trailer, tank, or intermodal container) (excludes gas cylinders *See "2B"*)	**1B**	**8003 or 8004**
Gas Cylinder Container Identification Code assigned by the manufacturer in conformance with U.S. Department of Transportation (D.O.T.) standards	**2B**	**n/e**
Motor Freight Transport Equipment Identification Code assigned by the manufacturer in conformance with International Organization for Standardization (ISO) standards	**3B**	**n/e**
Standard Carrier Alpha Code (SCAC) (an4 - dash "-" filled left) and carrier assigned trailer number	**4B**	**n/e**
Receptacle Asset Number – Consisting of two joined parts: • Identification of an organization in accordance with ISO/IEC 15459 and a unique entity identification assigned in accordance with rules established by the issuing agency • A unique serial number assigned by the entity, ending with a 3-character container type code taken from EDIFACT Code List 8053 or UPU standard M82-3. (If the container type code listed is less than three characters in length, the field will be dash "-" filled left to the length of three characters)	**5B**	**8003**
Reserved	**6B**	**n/e**
Identification of a returnable container owner assigned in cooperation with BIC, followed by the unique container identification assigned by the container owner, e.g. 7B OC EI CSN CD, where the OC is the owner code assigned in cooperation with BIC, the EI is the equipment category code assigned in cooperation with BIC, the CSN is unique container identification assigned by the equipment owner, and CD is the modulus 11 check digit calculated in accordance with Annex A, ISO 6346.	**7B**	**n/e**

CATEGORY/DESCRIPTION	ANSI MH10.8.2 DI	GS1 AI
Identification of a returnable container owner assigned in cooperation with BIC	**8B**	**n/e**
Container Type as defined in ISO 6346	**9B**	**n/e**
Container Ownership Code. Actual four-character abbreviation marked on the container by the owner. For DOD owned containers see Defense Transportation Regulation App EE-6	**10B**	**n/e**
Van Number (complete number minus check digit)	**11B**	**n/e**
Check digit of Van Number identified in 11B	**12B**	**n/e**
Container Number Code (last 5 digits of number not counting check digit)	**13B**	**n/e**
Reserved	**14B – 24B**	**n/e**
Identification of a party to a transaction as identified in 18V, followed by the supplier assigned serial number to a returnable transport item (RTI)	**25B**	**8003**
Reserved	**26B – 999B**	**n/e**
CATEGORY 3: Field Continuation		
Continuation of an Item Code (Category 16) assigned by Customer that is too long for a required field size	**C**	**n/e**
Continuation of Traceability Code (Category 20) assigned by Supplier	**1C**	**n/e**
Continuation of Serial Number (Category 19) assigned by Supplier	**2C**	**n/e**
Continuation of Free Text (Category 26) mutually defined between Supplier/Carrier/Customer	**3C**	**n/e**
Continuation of Transaction Reference (Category 11) mutually defined between Supplier/Carrier/Customer	**4C**	**n/e**
Continuation of Item Code (Category 16) Assigned by Supplier	**5C**	**n/e**
Reserved – Prior Assignment (2009) – To be re-released upon publication of AIM IUIDC-1, currently on hold.	**6C**	**n/e**
Reserved	**7C - 999C**	**n/e**
CATEGORY 4: Date		
Format YYMMDD[Note 2]	**D**	**n/e**
Format DDMMYY[Note 2]	**1D**	**n/e**
Format MMDDYY[Note 2]	**2D**	**n/e**
Format YDDD (Julian)[Note 2]	**3D**	**n/e**
Format YYDDD (Julian)[Note 2]	**4D**	**n/e**
ISO format YYMMDD immediately followed by an ANSI X12.3 Data Element Number 374 Qualifier providing a code specifying type of date (e.g., ship date, manufacture date)	**5D**	**n/e**
Production Date (YYMMDD)	**5D…405**	**11**
Expiration Date (YYMMDD)	**5D…036**	**17**
Packaging Date (YYMMDD)	**n/e**	**13**
Best Before/Sell By Date (YYMMDD)	**n/e**	**15**
ISO format YYYYMMDD immediately followed by an ANSI X12.3 Data Element Number 374 Qualifier providing a code specifying type of date (e.g., ship date, manufacture date)	**6D**	
Format MMYY[Note 2]	**7D**	**n/e**
Reserved	**8D**	**n/e**
Date (structure and significance mutually defined)	**9D**	**n/e**
Format YYWW[Note 2]	**10D**	**n/e**
Format YYYYWW[Note 2]	**11D**	**n/e**
Format YYYYMMDD[Note 2]	**12D**	**n/e**
Oldest and Newest Manufacturing Date in the format YYWWYYWW	**13D**	**n/e**
Expiration Date (YYYYMMDD)	**14D**	**n/e**

CATEGORY/DESCRIPTION	ANSI MH10.8.2 DI	GS1 AI
Expiration Date (DDMMYYYY)	**15D**	**n/e**
Production Date (YYYYMMDD)	**16D**	**n/e**
Production Date (DDMMYYYY)	**17D**	**n/e**
Date and Time of Production (YYMMMDDHHSS)	**n/e**	**8008**
Reserved	**18D – 19D**	**n/e**
Inspection Date (DDMMMYYYY)	**20D**	**n/e**
Required Delivery Date (DDD Julian) or DOD MILSTAMP Code	**21D**	**n/e**
Record Date Time Stamp (YYYYMMDDTTTT) where T equals hour and minutes	**22D**	**n/e**
Date	**23D**	**n/e**
Qualified date	**24D**	**n/e**
Expiration Date and Time (YYMMDDHHMM)	**n/e**	**7003**
Reserved	**25D – 999D**	**n/e**
CATEGORY 5: Reserved		
Restricted Substance Classification – "Environmental Classification Code" including Lead-Free (Pb-Free) finish categories defined in JESD97 (IPC JEDEC J-STD-609), and future Industry or governmental agency assigned codes related to environmental regulatory compliance and hazardous material content	**E**	**n/e**
Air pressure – (altitude) expressed in Pascal's as the standard international measure	**1E**	**n/e**
Reserved	**2E – 9E**	**n/e**
Cumulative Time Temperature index – expressed as the number of measurements or counts	**10E**	**n/e**
Time Temperature Index – Next Higher Assembly – expressed as the number of measurements or counts	**11E**	**n/e**
Reserved	**12E – 999E**	**n/e**
CATEGORY 6: Looping		
Looping Header as defined as Section VI of this document	**F**	
My "parent" is . . .	**1F**	**n/e**
My "children" are . . .	**2F**	**n/e**
I have _____ children	**3F**	**n/e**
Reserved	**4F – 999F**	
CATEGORY 7: Reserved		
Reserved	**G - 999G**	
CATEGORY 8: Human Resources		
Reserved	**H**	**n/e**
Employee Identification Code assigned by employer	**1H**	**n/e**
U.S. Social Security Number	**2H**	**n/e**
ID Number for non-employee (internally assigned or mutually defined) (e.g., contract workers, vendors, service, and delivery personnel)	**3H**	**n/e**
National Social Security Number	**4H**	**n/e**
Last Name	**5H**	**n/e**
Reserved	**6H – 9H**	**n/e**
Personal Identification Code (first initial, Last Initial, last four of SSN)	**10H**	**n/e**
First name and middle initial	**11H**	**n/e**
Military Grade (E1-E9, W1-W5, and O1-O10)	**12H**	**n/e**
Reserved	**13H – 999H**	**n/e**
CATEGORY 9: Reserved		

Exclusive Assignment - Exclusive Assignment - Vehicle Identification Number (VIN) as defined in the U.S. under 49 CFR, §§ 565 and internationally by ISO 3779. (These are completely compatible data structures)	**I**	**n/e**
Reserved	**1I**	**n/e**
CATEGORY/DESCRIPTION	**ANSI MH10.8.2 DI**	**GS1 AI**
Abbreviated VIN Code	**2I**	**n/e**
Reserved – Prior assignment	**3I**	**n/e**
Reserved - Not recommended for use due to similarity of "1" to "I"	**4I - 999I**	**n/e**
CATEGORY 10: License Plate		
Unique license plate number*	**J**	**00**
Unique license plate number* assigned to a transport unit which is the lowest level of packaging, the unbreakable unit	**1J**	**00**
Unique license plate number* assigned to a transport unit which contains multiple packages	**2J**	**00**
Unique license plate number* assigned to a transport unit which is the lowest level of packaging, the unbreakable unit and which has EDI data associated with the unit	**3J**	**00**
Unique license plate number* assigned to a transport unit which contains multiple packages and which is associated with EDI data	**4J**	**00**
Unique license plate number* assigned to a mixed transport unit containing unlike items on a single customer transaction and may or may not have associated EDI data.	**5J**	**n/e**
Unique license plate number* assigned to a master transport unit containing like items on a single customer transaction and may or may not have associated EDI data.	**6J**	**n/e**
Vehicle Registration License Plate Number (not unique without identification of country and issuing governmental region/authority)	**7J**	**n/e**
Reserved	**8J – 999J**	**n/e**
***Note: For a license plate number to be unique world wide requires: 1) A unique number assigned by the trading partner, 2) A unique code assigned to the trading partner by an organization, and 3) A unique code providing global identification of the assigning organization. ISO/IEC 15459-1:1999 describes the format and usage of these Data Identifiers.**		
CATEGORY 11: Transaction Reference Used In Trading Relationships		
Order number assigned by Customer to identify a Purchasing Transaction (e.g., purchase order number)	**K**	**400**
Order number assigned by Supplier to identify a Purchasing Transaction	**1K**	**n/e**
Bill of Lading/Waybill/Shipment Identification Code assigned by Supplier/Shipper	**2K**	**402**
Bill of Lading/Waybill/Shipment Identification Code assigned by Carrier	**3K**	**n/e**
Line number of the order assigned by Customer to identify a Purchasing Transaction (See Annex C.9)	**4K**	**400**
Reference number assigned by the Customer to identify a Shipment Authorization (Release) against an established Purchase Order	**5K**	**400**
PRO# Assigned by Carrier	**6K**	**n/e**
Carrier Mode in Free Text format mutually defined between Customer and Supplier (e.g., Air, Truck, Boat, Rail)	**7K**	**n/e**
Contract Number	**8K**	
Generic Transaction Reference Code (internally assigned or mutually defined)	**9K**	**n/e**
Invoice Number	**10K**	**n/e**

Packing List Number	**11K**	**n/e**
SCAC (Standard Carrier Alpha Code) (an4 - dash "-" filled left) and carrier assigned PROgressive number	**12K**	**95 or 95**
Reserved	**13K**	**n/e**
CATEGORY/DESCRIPTION	**ANSI MH10.8.2 DI**	**GS1 AI**
Combined Order Number and Line Number in the format nn...nn+nn...n where a plus symbol (+) is used as a delimiter between the Order Number and Line Number	**14K**	**400**
KANBAN Number	**15K**	**n/e**
DELINS Number: code assigned to identify a document which contains delivery information	**16K**	**n/e**
Check Number	**17K**	**n/e**
Structured Reference (See Annex C.10)	**18K**	**n/e**
Foreign Military Sales Case Number	**19K**	**n/e**
License identifier	**20K**	**n/e**
Customer data related to item or transaction	**21K**	**n/e**
Transaction authentication	**22K**	**n/e**
Reserved	**23K – 24K**	**n/e**
Carrier assigned unique identification of groupings of transport units	**25K**	**n/e**
Shipper assigned unique identification of groupings of transport units	**26K**	**n/e**
Reserved	**27K – 999K**	**n/e**
CATEGORY 12: Location Reference		
Storage Location	**L**	**n/e**
Location	**1L**	**n/e**
"Ship To:" Location code defined by an industry standard or mutually defined	**2L**	**410**
"Ship From:" Location code defined by an industry standard or mutually defined	**3L**	**n/e**
GLN Extension component	**n/e**	**254**
"Bill To" (Invoice To) - GS1 Global Location Number	**n/e**	**411**
"Purchased From" - GS1 Global Location Number	**n/e**	**412**
Country of Origin, two-character ISO 3166 country code	**4L**	**422**
"Ship For:" Location code defined by an industry standard or mutually defined	**5L**	**413**
Route Code assigned by the supplier to designate a specific transportation path	**6L**	**403**
6-digit Department of Defense Activity Code (DoDAAC)	**7L**	**n/e**
Port of Embarkation – Mutually defined	**8L**	**n/e**
Port of Debarkation – Mutually defined	**9L**	**n/e**
Country of Initial Processing	**n/e**	**423**
Country of Processing	**n/e**	**424**
Country of Disassembly	**n/e**	**425**
Country covering full process chain	**n/e**	**426**
Reserved	**10L – 19L**	**n/e**
The following DIs can be used to provide for Location identification, which is different than or in addition to Location Reference provided by "L".		
First Level (internally assigned)	**20L**	**n/e**
Second Level (internally assigned)	**21L**	**n/e**
Third Level (internally assigned	**22L**	**n/e**
Fourth Level (internally assigned)	**23L**	**n/e**
Fifth Level (internally assigned)	**24L**	**n/e**

Identification of a party to a transaction as identified in 18V, followed by an internal physical location of and assigned by the party identified in 18V, e.g., 25L IAC CIN LOC, where the IAC is the issuing agency code assigned by the ISO 15459-2 Registration Authority, the CIN is the company identification code assigned by the IAC, and the LOC is the physical internal location assigned by the CIN.	**25L**	**414**
Location code to a related transaction	**26L**	**n/e**
Reserved	**26L – 50L**	**n/e**
The following two Data Identifiers are to be used for shipments within the jurisdiction of a single postal authority.		
"Ship From:" - Location code defined by a postal authority (e.g., 5-digit and 9-digit ZIP codes identifying U.S. locations or 6-character postal codes identifying Canadian locations)	**51L**	**n/e**
CATEGORY/DESCRIPTION	**ANSI MH10.8.2 DI**	**GS1 AI**
"Ship To:" - Location code defined by a postal authority (e.g., 5-digit and 9-digit ZIP codes identifying U.S. locations or 6-character postal codes identifying Canadian locations)	**52L**	**420**
Reserved	**53L**	**n/e**
The following two Data Identifiers are to be used for shipments between locations governed by different postal authorities		
"Ship From:" - Location code defined by a postal authority in the format: postal codes (e.g., 5-digit ZIP codes identifying U.S. locations or 6- or 7-character postal codes identifying United Kingdom locations) followed by two character ISO 3166 country code (e.g., US or GB)	**54L**	**n/e**
"Ship To:" - Location code defined by a postal authority in the format: postal codes (e.g., 5-digit ZIP codes identifying U.S. locations or 6- or 7-character postal codes identifying United Kingdom locations) followed by two character ISO 3166 country code (e.g., US or GB)	**55L**	**n/e**
Ship To (Deliver To) Postal Code With 3-digit ISO Country Code Prefix	**n/e**	**421**
Reserved	**56L - 999L**	**n/e**
CATEGORY 13: Maintenance Codes		
Reserved	**M**	**n/e**
Reserved	**1M – 9M**	**n/e**
Army form 2410 data. Format is data value preceded by the block number of the form 2410. Field lengths and acceptable characters can be found at http://www.apd.army.mil/pdffiles/p738_751.pdf	**10M**	**n/e**
Army form 2408 data. Format is data value preceded by the block number of the form 2408. field lengths and acceptable characters can be found at http://www.apd.army.mil/pdffiles/p738_751.pdf	**11M**	**n/e**
Army form 2407 data. Format is data value preceded by the block number of the form 2407. field lengths and acceptable characters can be found at http://www.apd.army.mil/pdffiles/p738_751.pdf	**12M**	**n/e**
Air Force Form 95 data. Format is data value preceded by the block number of the form 95. Field lengths and acceptable characters can be found at http://www.abqbetty.com/Logistics/00-20-5.pdf	**13M**	**n/e**
Navy Form 4790 data. Format is data value preceded by the block number of the form 2410. Field lengths and acceptable character can be found at http://www.tpub.com/content/aviation/12324/	**14M**	**n/e**
Reserved	**15M – 999M**	**n/e**
CATEGORY 14: Industry Assigned Codes		
National/NATO Stock Number (NSN)	**N**	**7001**
Product Characteristic Data defined by the Chemical Industry Data Exchange (CIDX)	**1N**	**n/e**
Reserved	**2N**	**n/e**

Coding Structure in Accordance with Format Defined by Electronic Industries Association Japan (EIAJ)	**3N**	**n/e**
Coding Structure and Formats in Accordance with GS1 Application Identifiers (AI plus data) (GS1)	**4N**	**n/e**
Coding Structure and Formats in Accordance with AIAG Recommendations. The full code list can be found at http://www.autoid.org/ANSI_MH10_SC8/5N_DI_Table/5N_DI_Table.htm	**5N**	**n/e**
U.S. DOD Requisition and Issue Procedure Codes. The format is the MILSTRIP code the appropriate followed by the data value associated with that code. (The full list of codes is available at http://www.dla.mil/j6/dlmso/eLibrary/Manual/MILSTRIP/Reissue2004/MILSTRIPfileformats.asp in Appendix 2	**6N**	**n/e**

CATEGORY/DESCRIPTION	ANSI MH10.8.2 DI	GS1 AI
U.S. Defense Transportation Regulation codes. The format is the DTR code followed by the appropriate data value associated with that code. (The full list of codes is available at http://www.transcom.mil/j5/pt/dtr_part_ii.html in appendices Y through YY)	**7N**	**n/e**
Production animal identification codes. The format is the production animal code followed by the appropriate data value associated with that code. (The full list of codes is maintained at the website http://aimglobal.org/)	**8N**	**n/e**
Reserved	**9N – 999N**	**n/e**
UN/ECE Meat Carcasses and Cuts Classification	**n/e**	**7002**
Approval number of processor with ISO country code	**n/e**	**703(s)**
CATEGORY 15: Reserved		
Not recommended for use due to similarity of "0" (zero) to "O"	**O - 999O**	**n/e**
CATEGORY 16: Item Information		
Item Identification Code assigned by Customer	**P**	**241**
Item Identification Code assigned by Supplier	**1P**	**01**
Code assigned to specify the revision level for an Item (e.g., engineering change level, edition, or revision)	**2P**	**n/e**
Combined manufacturer identification code/item code under the 12/13-digit GS1 formats, plus supplemental codes, if any	**3P**	**GS1 GTIN**
Roll products - Width, Length, Core Diameter, Direction, & Splices	**n/e**	**8001**
Item Code portion of GS1 formats	**4P**	**n/e**
Freight Classification Item Number assigned by Carrier for purposes of rating hazardous materials (e.g., Motor Freight, Air, Boat, Rail Classification)	**5P**	**n/e**
Combined supplier identification and item code (internally assigned or mutually defined)	**6P**	**n/e**
Common Language Equipment Identification (CLEI) assigned by the manufacturer to some telecommunications equipment	**7P**	**n/e**
14-digit GS1 format for SCC-14 code structure	**8P**	**01**
Combined manufacturer identification code (9-digit DUNS number assigned by Dun & Bradstreet) and the item code/part number (assigned by the manufacturer).	**9P**	**n/e**
Hazardous Material Code as defined by ANSI X12.3 in the format Data Element 208 (1-character code qualifier) followed by Data Element 209 (Hazardous Material Code)	**10P**	**n/e**
10-character CLEI Code for telecommunications equipment	**11P**	**n/e**
Document Type (e.g., Pick List, Design Drawing, etc.) (internally assigned or mutually defined)	**12P**	**n/e**
VMRS System Code	**13P**	**n/e**
VMRS System and Assembly Code	**14P**	**n/e**
VMRS System, Assembly, & Part Code	**15P**	**n/e**
VMRS System, Assembly, or Part Code (User Modified	**16P**	**n/e**
Combined GS1 supplier identification and item code assigned by the supplier	**17P**	**01**
Combined VMRS supplier ID and supplier assigned part number	**18P**	**n/e**
Component of an Item (One product contained in multiple packages)	**19P**	**8006**
Product Variant	**n/e**	**20**
HIBCC - Quantity, Date, Batch, and Link	**n/e**	**22**
Made-to-Order Variation Number	**n/e**	**242**

CATEGORY/DESCRIPTION	ANSI MH10.8.2 DI	GS1 AI
The following five DIs can be used to provide for Item identification (Item ID), which is different than or in addition to Item ID provided by "P".		
First Level (Customer Assigned)	**20P**	**n/e**
Second Level (Customer Assigned)	**21P**	**n/e**
Third Level (Customer Assigned)	**22P**	**n/e**
Fourth Level (Customer Assigned)	**23P**	**n/e**
Fifth Level (Customer Assigned)	**24P**	**n/e**
Identification of a party to a transaction as identified in 18V, followed by the supplier assigned part number.	**25P**	**n/e**
Part Number of next higher assembly	**26P**	**n/e**
Reserved	**27P – 29P**	**n/e**
The following five DIs can be used to provide for Item identification (Item ID), which is different than or in addition to Item ID provided by "1P".		
First Level (Supplier Assigned)	**30P**	**240**
Second Level (Supplier Assigned)	**31P**	**n/e**
Third Level (Supplier Assigned)	**32P**	**n/e**
Fourth Level (Supplier Assigned)	**33P**	**n/e**
Fifth Level (Supplier Assigned)	**34P**	**n/e**
Reserved	**35P – 39P**	**n/e**
A code assigned by a customer to the identification number of the manufacturer's Material Safety Data Sheet (MSDS) document that describes the uses, hazards, and chemical composition of a hazardous material.	**40P**	**n/e**
Reserved	**41P – 49P**	**n/e**
Manufacturer-assigned item identifier - Manufacturer-assigned item identifier comprising an item number assigned by the item manufacturer, followed by a plus (+) sign, followed - if required to uniquely identify the item within the manufacturer's product range - by a manufacturer-assigned item version.	**50P**	**n/e**
Globally unique item identifier comprising the Identification of a party to a transaction as identified in 18V, followed by a plus (+) sign, followed by the Manufacturer-assigned item identifier as defined with 50P	**51P**	**n/e**
Reserved	**52P - 999P**	**n/e**
CATEGORY 17: Measurement		
Quantity, Number of Pieces, or Amount (numeric only) (unit of measure and significance mutually defined	**Q**	**30**
Theoretical Length/Weight (numeric only)	**1Q**	**n/e**
Actual Weight (numeric only)	**2Q**	**n/e**
Unit of Measure, as defined by the two character ANSI X12.3 Data Element Number 355 Unit of Measurement Code	**3Q**	**n/e**
Gross Amount	**4Q**	**n/e**
Net Amount	**5Q**	**n/e**
Reserved	**6Q**	**n/e**
Quantity, Amount, or Number of Pieces in the format: Quantity followed by the two character ANSI X12.3 Data Element Number 355 Unit of Measurement Code	**7Q**	**↓↓↓↓**
Net Weight, Kilograms	**7Q...58**	**310**
Length or 1st Dimension, Meters	**7Q...MR**	**311 or 331**
Width, Diameter, or 2nd Dimension, Meters	**7Q...MR**	**312 or 332**
Depth, Height, or Thickness or 3rd Dimension, Meters	**7Q...MR**	**313 or 333**
Area, Square Meters	**7Q...SM**	**314 or 334**
Volume, Liters	**7Q...LT**	**315 or 335**

CATEGORY/DESCRIPTION	ANSI MH10.8.2 DI	GS1 AI
Volume, Cubic Meters (Net)	**7Q...CO**	**316**
Volume, Cubic Meters (Gross)	**7Q...CR**	**336**
Net Weight, Pounds	**7Q...PN**	**320**
Length or 1st Dimension, Inches	**7Q...ED**	**321 or 341**
Length or 1st Dimension, Feet	**7Q...EZ**	**322 or 342**
Length or 1st Dimension, Yards	**7Q...YD**	**323**
Length or 1st Dimension, Yards (Gross)	**7Q...GY**	**343**
Width, Diameter, or 2nd Dimension, Inches	**7Q...ED**	**324 or 344**
Width, Diameter, or 2nd Dimension, Feet	**7Q...EZ**	**325 or 345**
Width, Diameter, or 2nd Dimension, Yards	**7Q...YD**	**326**
CATEGORY/DESCRIPTION	**ANSI MH10.8.2 DI**	**GS1 AI**
Width, Diameter, or 2nd Dimension, Yards (Gross)	**7Q...GY**	**346**
Depth, Thickness, Height or 3rd Dimension, Inches	**7Q...ED**	**327 or 347**
Depth, Thickness, Height or 3rd Dimension, Feet	**7Q...EZ**	**328 or 348**
Depth, Thickness, Height or 3rd Dimension, Yards	**7Q...YD**	**329**
Depth, Thickness, Height or 3rd Dimension, Yards	**7Q...GY**	**349**
Gross Weight, Kilograms	**7Q...GT**	**330**
Kilograms per Square Meter	**7Q...KM**	**337**
Gross Weight, Pounds	**7Q...PG**	**340**
Area, Square Inches	**7Q...SI**	**350 or 353**
Area, Square Feet	**7Q...SF**	**351 or 354**
Area, Square Yards	**7Q...SY**	**352 or 355**
Net Weight, Troy Ounces	**7Q...TO**	**356**
Net Weight, Ounces	**7Q...OZ**	**357**
Volume, Quarts	**7Q...QT**	**360 or 362**
Volume, Gallons	**7Q...GA**	**361**
Volume, Gallons (Gross)	**7Q...GN**	**363**
Volume, Cubic Inches	**7Q...CI**	**364 or 367**
Volume, Cubic Feet	**7Q...CF**	**365 or 368**
Volume, Cubic Yards	**7Q...CY**	**366 or 369**
Reserved	**8Q**	**n/e**
Piece Weight: weight of a single item	**9Q**	**n/e**
Reserved	**10Q**	**n/e**
Tare Weight: weight of an empty container	**11Q**	**n/e**
Monetary Value established by the Supplier in the format of: the value followed by an ISO 4217 data element code for representing unit of value of currencies and funds (e.g., 12Q2.50USD) (2.50 Monetary Value in USA Dollars) significance mutually defined	**12Q**	**n/e**
# of # ("this is the *nth* piece of *x* pieces in this shipment") Presented in the format "*n/x*", where the "/" (slash) is used as a delimiter between two values. See Annex C.6.3 for further information	**13Q**	**n/e**
Beginning Secondary Quantity	**14Q**	**n/e**
Ending Secondary Quantity	**15Q**	**n/e**
Number of pieces in Van	**16Q**	**n/e**
Number of shipments in van	**17Q**	**n/e**
Cube expressed in cubic meters or cubic feet as indicated by the ANSI X12.3 data element number 355 unit of measure code (CR or CF). No implied decimal point.	**18Q**	**n/e**
Width expressed in linear meters or linear feet as indicated by the ANSI X12.3 data element number 355 unit of measure (LC or LF). No implied decimal point.	**19Q**	**n/e**

CATEGORY/DESCRIPTION	ANSI MH10.8.2 DI	GS1 AI
Height expressed in linear meters or linear feet as indicated by the ANSI X12.3 data element number 355 unit of measure (LC or LF). No implied decimal point.	**20Q**	**n/e**
Length expressed in linear meters or linear feet as indicated by the ANSI X12.3 data element number 355 unit of measure (LC or LF). No implied decimal point.	**21Q**	**n/e**
Net weight of shipment expressed in pounds or kilograms (kilos) as indicated by the ANSI X12.3 data element number 355 unit of measure (LB or KG). No implied decimal point.	**22Q**	**n/e**
Van length expressed in linear meters or linear feet as indicated by the ANSI X12.3 data element number 355 unit of measure (LC or LF). No implied decimal point.	**23Q**	**n/e**
Inside cube of a van expressed in cubic meters or cubic feet as indicated by the ANSI X12.3 data element number 355 unit of measure code (CR or CF). No implied decimal point.	**24Q**	**n/e**
Net explosive weight (a computed value of explosive equivalent expressed in pounds of TNT). The measure of NEW, is used internationally for explosive safety quantity distance arc computations. No implied decimal point.	**25Q**	**n/e**
Packaging Level, specifying the hierarchical level of packaging in accordance with HIBC (Health Industry Bar Code) specifications	**26Q**	**n/e**
Reserved	**26Q – 999Q**	**n/e**
CATEGORY 18: Miscellaneous		
Reserved	**R**	**n/e**
Return Authorization Code (RMA) assigned by the Supplier	**1R**	**n/e**
Return Code assigned by the Customer	**2R**	**n/e**
Reserved	**3R**	**n/e**
U.S. Department of Defense Identification Code (DoDIC)	**4R**	**n/e**
Reserved	**5R - 999R**	**n/e**
CATEGORY 19: Traceability Number for an Entity		
Serial number or code assigned by the Supplier to an entity for its lifetime, (e.g., computer serial number, traceability number, contract tool identification)	**S**	**21**
Additional code assigned by the Supplier to an entity for its lifetime (e.g., traceability number, computer serial number)	**1S**	**n/e**
Advance Shipment Notification (ASN) Shipment ID (SID) corresponds to ANSI ASC X12 Data Element 396	**2S**	**n/e**
Unique Package Identification assigned by Supplier (lowest level of packaging which has a package ID code; shall contain like items)	**3S**	**n/e**
Package Identification assigned by Supplier to master packaging containing like items on a single customer order (See Annex C.7)	**4S**	**n/e**
Package Identification assigned by Supplier to master packaging containing unlike items on a single customer order (See Annex C.7)	**5S**	**n/e**
Package Identification assigned by Supplier to master packaging containing like items over multiple customer orders (See Annex C.7)	**6S**	**n/e**
Package Identification assigned by Supplier to master packaging containing unlike items over multiple customer orders (See Annex C.7)	**7S**	**n/e**
Supplier ID/Unique Container ID presented in the data format specified by the GS1 SSCC-18	**8S**	**00**
Package Identification, Generic (mutually defined)	**9S**	**n/e**
Machine, cell, or tool ID code	**10S**	**n/e**

CATEGORY/DESCRIPTION	ANSI MH10.8.2 DI	GS1 AI
Fixed asset ID code	**11S**	**n/e**
Document Number (internally assigned or mutually defined)	**12S**	**n/e**
Container Security Seal	**13S**	**n/e**
4th Class Non-identical parcel post manifesting	**14S**	**n/e**
Serial Number Assigned by the Vendor Entity, that can only be used in conjunction with "13V"	**15S**	**n/e**
Version Number, e.g., Software Version	**16S**	**n/e**
Combined 6-digit GS1 supplier identification and unique package identification assigned by the supplier	**17S**	**n/e**
Reserved (CAGE Code & Serial Number unique within CAGE)	**18S**	**n/e**
Combined Dun & Bradstreet company identification of the supplier followed by a unique package identification assigned by the supplier, in the format nn...nn+nn...n where a plus symbol (+) is used as a delimiter between the DUNS Number and unique package identification	**19S**	**n/e**
Traceability code for an entity assigned by the customer	**20S**	**n/e**
Combined U.S. D.O.T. Tire Manufacturer Plant Code and unique tire identification assigned by the supplier	**21S**	**n/e**
Electronic Serial Number for Cellular Mobile Telephones	**22S**	**8002**
Media Access Control (MAC) Address conforming with IEEE 802.11	**23S**	**n/e**
Reserved	**24S**	**n/e**
Identification of a party to a transaction as identified in 18V, followed by the supplier assigned serial number.	**25S**	**n/e**
Reserved	**26S - 29S**	**n/e**
Global Identifier Serialized for Trade (GIST)	**n/e**	**252**
Additional traceability code for an entity assigned by the supplier in addition to or different from the traceability code(s) provided by "S" or "1S"	**30S**	**250**
Beginning Serial Number for serial numbers in sequence	**31S**	**n/e**
Ending Serial Number for serial numbers in sequence	**32S**	**n/e**
Serial number of Next higher assembly	**33S**	**n/e**
Serial number or Part number of End Item	**34S**	**n/e**
Bumper Number (Used in Unit DOD Move)	**35S**	**n/e**
Pallet Identifier (Used for loaded 463L air pallets)	**36S**	**n/e**
Reserved	**37S – 49S**	**n/e**
The following five DIs can be used to provide for identification of entities within a single unit that is different than or in addition to identification provided by "S".		
First Level (Supplier Assigned)	**50S**	**n/e**
Second Level (Supplier Assigned)	**51S**	**n/e**
Third Level (Supplier Assigned)	**52S**	**n/e**
Fourth Level (Supplier Assigned)	**53S**	**n/e**
Fifth Level (Supplier Assigned)	**54S**	**n/e**
Reserved	**55S - 95S**	**n/e**
96-bit EPC data structure (EPCglobal)	**96S**	**n/e**
Encrypted serial number	**97S**	**n/e**
Reserved	**98S – 999S**	**n/e**
CATEGORY 20: Traceability Number for Groups of Entities		
Traceability Number assigned by the Customer to identify/trace a unique group of entities (e.g., lot , batch , heat)	**T**	**n/e**
Traceability Number assigned by the Supplier to identify/trace a unique group of entities (e.g., lot , batch , heat)	**1T**	**10**
Reserved	**2T**	**n/e**

CATEGORY/DESCRIPTION	ANSI MH10.8.2 DI	GS1 AI
Exclusive Assignment (U.S. EPA vehicle identification for emissions testing)	**3T**	**n/e**
Reserved	**4T - 19T**	**n/e**
The following five DIs can be used to provide for identification of a group of entities, which is different than or in addition to identification provided by "T".		
First Level (Customer Assigned)	**20T**	**n/e**
Second Level (Customer Assigned)	**21T**	**n/e**
Third Level (Customer Assigned)	**22T**	**n/e**
Fourth Level (Customer Assigned)	**23T**	**n/e**
Fifth Level (Customer Assigned)	**24T**	**n/e**
Identification of a party to a transaction as identified in 18V, followed by the supplier assigned traceability number.	**25T**	**n/e**
Reserved	**26T - 29T**	**n/e**
The following five DIs can be used to provide for identification of a group of entities, which is different than or in addition to identification provided by "1T".		
First Level (Supplier Assigned)	**30T**	**n/e**
Second Level (Supplier Assigned)	**31T**	**n/e**
Third Level (Supplier Assigned)	**32T**	**n/e**
Fourth Level (Supplier Assigned)	**33T**	**n/e**
Fifth Level (Supplier Assigned)	**34T**	**n/e**
Reserved	**35T - 999T**	**n/e**
CATEGORY 21: UPU/MH 10/SC8 Agreed Upon Codes		
Reserved	**U-4U**	**n/e**
Specification of a postal service and associated process data in accordance with UPU standard S25 data construct “Service Data”	**5U**	**n/e**
Licensing post data, in accordance with the specification in UPU standard S25.	**6U**	**n/e**
Reserved for Assignment for UPU needs in collaboration with ASC MH 10/SC 8	**7U – 14U**	**n/e**
Specification of supplementary postal service and associated process data in accordance with UPU standard S25 data construct	**15U**	**n/e**
Postal administration identifications, being the identification, expressed in accordance with the specification in UPU standard S25, of one or more postal administrations involved in the processing of a mail item or batch.	**16U**	**n/e**

UPU location code, being a code identifying a location or geographic area, or an associated group of such locations or areas, that has relevance to a related transaction and that complies with one of the structures defined in a) to g) below: h) two upper case alphabetic characters corresponding to the ISO 3166-1 two alpha country code of the country in which, or consisting of which, the location(s) or area(s) are situated; i) three upper case alphabetic characters corresponding to the IATA code of the airport or city in, close to, or consisting of which the location(s) or area(s) are situated; j) four or more characters of which the first three correspond to an ISO 3166-1 country code followed by a dash (-), with the balance being a postcode in the country concerned; k) four or more characters of which the first three correspond to an ISO 3166-1 country code followed by a dot (.), with the balance being an ISO 3166-2 country subdivision code in the country concerned; l) five upper case alphabetic characters corresponding to the UN/LOCODE of the area in, close to, or consisting of which, the location(s) or area(s) are situated; m) six upper case alphanumeric characters corresponding to a UPU IMPC code allocated in accordance with UPU standard S34; n) the concatenation, being not less than seven nor more than 25 characters in length, of: — an issuer code allocated in accordance with UPU standards S31; — a location code, consisting of characters drawn from the set {A-Z; 0-9} which accords with specifications of the issuer concerned.	**17U**	**n/e**
Qualified UPU location code, concatenation of: — a location category drawn from UPU code list 139; — a data identifier 17U UPU location code	**18U**	**n/e**
License plate with service data and location code is a compound data construct, compliant with the specification in UPU standard S25, which includes specification of: — an ISO/IEC 15459-compliant item identifier; — a data identifier 5U compliant specification of the service to be provided in respect of the item; — a data identifier 17U compliant UPU location code or a data identifier 18U compliant qualified UPU location code. *Note: For further details, please refer to UPU standard S25. The distinction between a simple UPU location code (DI 17U) and a qualified UPU location code (DI 18U) can be determined from the first character. If this is numeric, 18U applies; if it is alphabetic, 17U applies.*	**19U**	**n/e**
Reserved for Assignment for UPU needs in collaboration with ASC MH 10/SC 8	**20U – 54U**	**n/e**
OCR Data Locator	**55U**	**n/e**
Reserved	**56U – 999U**	**n/e**
CATEGORY 22: Party To The Transaction		
Supplier Code assigned by Customer	**V**	**n/e**
Supplier Code assigned by Supplier	**1V**	**n/e**
Prior Assignment	**2V**	**n/e**
Fabricator Code (GS1 Company Prefix) as assigned by the appropriate GS1 authority (Numbering organization)	**3V**	**n/e**
Carrier Identification Code assigned by an industry standard mutually defined by the Supplier, Carrier, and Customer	**4V**	**n/e**

Financial Institution Identification Code (mutually defined)	**5V**	**n/e**
Manufacturer's identification code (mutually defined)	**6V**	**n/e**
Code assigned to a party which has financial liability for an entity or group of entities (e.g., owner of inventory) (mutually defined)	**7V**	**n/e**
Customer code assigned by the customer	**8V**	**n/e**
Customer code assigned by the supplier	**9V**	**n/e**
Reserved	**10V**	**n/e**
Organization with budget responsibility for an entity, process, or procedure (e.g., shop, division, department)(internally assigned)	**11V**	**n/e**
DUNS number identifying manufacturer	**12V**	**n/e**
CATEGORY/DESCRIPTION	**ANSI MH10.8.2 DI**	**GS1 AI**
DUNS number identifying supplier	**13V**	**n/e**
DUNS number identifying customer	**14V**	**n/e**
Carrier-assigned shipper number	**15V**	**n/e**
VMRS Supplier ID	**16V**	**n/e**
U.S. DoD CAGE Code	**17V**	**n/e**
Identification of a party to a transaction in which the data format consists of two concatenated segments. The first segment is the unique code assigned to an issuing agency by NEN in accordance with ISO/IEC 15459, the second segment is a unique entity identification assigned in accordance with rules established by the issuing agency	**18V**	**n/e**
Specification of a party's role(s), in a transaction, consisting of one or more code values from EDIFACT Code List 3035 "Party Qualifier", separated by plus (+) characters (Never to be concatenated with other DIs in a linear symbol or other media where the concatenation character is a plus (+) character)	**19V**	**n/e**
Identification of a party to a transaction as identified in 18V, followed by a plus (+) character followed by one or more code values from EDIFACT Code List 3035 "Party Qualifier", separated by plus (+) characters (Never to be concatenated with other DIs in a linear symbol or other media where the concatenation character is a plus (+) character)	**20V**	**n/e**
Identification of a party to a transaction as identified in 18V, followed by the organizational sub-unit of and assigned by the party identified in 18V, e.g., 21V IAC CIN OSU, where the IAC is the issuing agency code assigned by the ISO 15459-2 Registration Authority, the CIN is the company identification code assigned by the IAC, and the OSU is the organizational sub-unit identification assigned by the CIN.	**21V**	**n/e**
Reserved	**22V – 999V**	**n/e**
Reference to Source Entity	**n/e**	**251**
CATEGORY 23: Activity Reference		
Work Order Number (e.g., "Production Paper") (internally assigned)	**W**	**n/e**
Operation Sequence Number	**1W**	**n/e**
Operation Code/Work Code - the type of work to be performed (internally assigned or mutually defined)	**2W**	**n/e**
Combined Work Order Number and Operation Sequence Number in the format nn...n+nn...n where a plus symbol (+) is used as a delimiter between the Work Order Number and the Operation Sequence Number	**3W**	**n/e**
Status Code (internally assigned or mutually defined)	**4W**	**n/e**
Work Unit Code – identifies system, subsystem, assembly, component etc. on which maintenance is performed	**5W**	**n/e**
Nomenclature – (internally assigned or mutually defined)	**6W**	**n/e**

Reserved	**7W – 9W**	**n/e**
Form Control Number – Preprinted control number on forms	**10W**	**n/e**
Quality Assurance Inspector – Last Name	**11W**	**n/e**
Telephone number of person completing the form	**12W**	**n/e**
Reserved	**13W – 999W**	**n/e**
CATEGORY 24: Reserved		
Reserved	**X - 999X**	**n/e**

CATEGORY/DESCRIPTION	ANSI MH10.8.2 DI	GS1 AI
CATEGORY 25: Internal Applications		
Never to appear on item/document which leaves a closed system environment	**Y - 999Y**	**91-93 & 97-99**
CATEGORY 26: Mutually Defined		
Mutually Defined between Customer and Supplier	**Z**	**n/e**
Mutually Defined between Carrier and Supplier	**1Z**	**n/e**
Mutually Defined between Customer and Carrier	**2Z**	**n/e**
Free Text	**3Z**	**n/e**
Mutually Defined between Carrier and Trading Partner	**4Z**	**n/e**
Reserved	**5Z - 9Z**	**n/e**
Structured Free Text (Header Data)	**10Z**	**n/e**
Structured Free Text (Line 1-89 Data)	**11Z - 99Z**	**n/e**
Reserved	**100Z - 999Z**	**n/e**

SECTION IV
MAPPING
GS1 AIs to ANS MH10.8.2 DIs

MAPPING GS1 AIs to ANSI MH10.8.2 DIs

AI	Data Content	Format
00	SSCC-18 (f.k.a. Serial Shipping Container Code)	J, 1J, 2J, 3J, 4J, 8S
01	Global Trade Item Number (GTIN) (f.k.a. SCC-14)	8P
02	GTIN of trade items contained in a logistic unit (Must be used with AI 37)	n/e
10	Batch or Lot Number	1T
11 (*)	Production Date (YYMMDD)	5D...405
12 (*)	Due Date (YYMMDD)	5D...013
13 (*)	Packaging Date (YYMMDD)	n/e
15 (*)	Minimum Durability Date (YYMMDD) (f.k.a Best Before / Quality)	n/e
17 (*)	Maximum Durability Date (YYMMDD) (f.k.a Use By / Safety)	5D...036
20	Product Variant	n/e
21	Serial Number	S
22	HIBCC - Quantity, Date, Batch, and Link	n/e
240	Additional Product Identification Assigned by the Manufacturer	30P
241	Customer Part Number	P
242	Made-to-Order Variation Number	n/e
250	Secondary Serial Number	30S
251	Reference to Source Entity	n/e
253	Global Document Type Identifier	n/e
254	GLN Extension component	n/e
30	Variable Count (f.k.a. Quantity)	Q
310 (***)	Net Weight, Kilograms	7Q...58
311 (***)	Length or 1st Dimension Trade, Meters	7Q...MR
312 (***)	Width, Diameter, or 2nd Dimension, Trade, Meters	7Q...MR
313 (***)	Depth, Thickness, Height or 3rd Dimension, Trade, Meters	7Q...MR
314 (***)	Area, Trade, Square Meters	7Q...SM
315 (***)	Net Volume, Liters	7Q...LT
316 (***)	Net Volume, Cubic Meters	7Q...CR
320 (***)	Net Weight, Pounds	7Q...PN
321 (***)	Length or 1st Dimension, Trade, Inches	7Q...ED
322 (***)	Length or 1st Dimension, Trade, Feet	7Q...EZ
323 (***)	Length or 1st Dimension, Trade, Yards	7Q...YD
324 (***)	Width, Diameter, or 2nd Dimension, Trade, Inches	7Q...ED
325 (***)	Width, Diameter, or 2nd Dimension, Trade, Feet	7Q...EZ
326 (***)	Width, Diameter, or 2nd Dimension, Trade, Yards	7Q...YD
327 (***)	Depth, Thickness, Height or 3rd Dimension, Trade, Inches	7Q...ED
328 (***)	Depth, Thickness, Height or 3rd Dimension, Trade, Feet	7Q...EZ
329 (***)	Depth, Thickness, Height or 3rd Dimension, Trade, Yards	7Q...YD
330 (***)	Gross Weight, Kilograms	7Q...GT
331 (***)	Length or 1st Dimension, Meters Logistics	7Q...MR
332 (***)	Width, Diameter, or 2nd Dimension, Meters Logistics	7Q...MR
333 (***)	Depth, Thickness, Height or 3rd Dimension, Meters, Logistics	7Q...MR
334 (***)	Area, Square Meters Logistics	7Q...SM
335 (***)	Gross Volume, Liters	7Q...LT
336 (***)	Gross Volume, Cubic Meters	7Q...CO
337 (***)	Kilograms per Square Meter	7Q...KM

AI	Data Content	Format
340 (***)	Gross Weight, Pounds	7Q...PG
341 (***)	Length or 1st Dimension, Inches Logistics	7Q...ED
342 (***)	Length or 1st Dimension, Feet Logistics	7Q...EZ
343 (***)	Length or 1st Dimension, Yards Logistics	7Q...GY
344 (***)	Width, Diameter, or 2nd Dimension, Inches Logistics	7Q...ED
345 (***)	Width, Diameter, or 2nd Dimension, Feet Logistics	7Q...EZ
346 (***)	Width, Diameter, or 2nd Dimension, Yards Logistics	7Q...GY
347 (***)	Depth, Thickness, Height or 3rd Dimension, Inches, Logistics	7Q...ED
348 (***)	Depth, Thickness, Height or 3rd Dimension, Feet, Logistics	7Q...EZ
349 (***)	Depth, Thickness, Height or 3rd Dimension, Yards, Logistics	7Q...GY
350 (***)	Area, Trade, Square Inches	7Q...SI
351 (***)	Area, Trade, Square Feet	7Q...SF
352 (***)	Area, Trade, Square Yards	7Q...SY
353 (***)	Area, Square Inches, Logistics	7Q...SI
354 (***)	Area, Square Feet, Logistics	7Q...SF
355 (***)	Area, Square Yards, Logistics	7Q...SY
356 (***)	Net Weight, Troy Ounces	7Q...TO
357 (***)	Net Volume, Ounces (U.S.)	7Q...OZ
360 (***)	Net Volume, Quarts	7Q...QT
361 (***)	Net Volume, Gallons (U.S.)	7Q...GA
362 (***)	Gross Volume, Quarts	7Q...QT
363 (***)	Gross Volume, Gallons (U.S.)	7Q...GN
364 (***)	Net Volume, Cubic Inches	7Q...CI
365 (***)	Net Volume, Cubic Feet	7Q...CF
366 (***)	Net Volume, Cubic Yards	7Q...CY
367 (***)	Gross Volume, Cubic Inches	7Q...CI
368 (***)	Gross Volume, Cubic Feet	7Q...CF
369 (***)	Gross Volume, Cubic Yards	7Q...CY
37	Count of Trade Items Contained in a Logistics Unit (For Use with AI 02 Only)	n/e
390 (***)	Amount Payable – single monetary area	n/e
391 (***)	Amount Payable – with ISO currency code	n/e
392 (***)	Amount Payable for a Variable Measure Trade Item – single monetary area	n/e
393 (***)	Amount Payable for a Variable Measure Trade Item – with ISO currency code	n/e
+400	Customer's Purchase Order Number	K
401	Consignment Number	n/e
402	Shipment Identification Number	2K
403	Routing Code	6L
410	"Ship To" (Deliver To) - GS1 Global Location Number	2L
411	"Bill To" (Invoice To) - GS1 Global Location Number	n/e
412	"Purchased From" - GS1 Global Location Number	n/e
413	"Ship For - Deliver For - Forward To" GS1 Global Location Number	5L
414	Identification of a Physical Location, GS1 Global Location Number	n/e
415	GS1 Global Location Number of the Invoicing Party	n/e
420	Ship To (Deliver To) Postal Code Within a Single Postal Authority	52L
421	Ship To (Deliver To) Postal Code With 3-digit ISO Country Code Prefix	55L
422	Country of Origin of a Trade Item	4L

AI	Data Content	Format
423	Country of Initial Processing	n/e
424	Country of Processing	n/e
425	Country of Disassembly	n/e
426	Country covering full process chain	n/e
7001	NATO Stock Number (NSN)	N
7002	UN/ECE Meat Carcasses and Cuts Classification	n/e
7003	Expiration Date and Time (YYMMDDHHMM)	n/e
703(s)	Approval number of processor with ISO country code	n/e
8001	Roll products - Width, Length, Core Diameter, Direction, & Splices	n/e
8002	Electronic Serial Number for Cellular Mobile Telephones	22S
8003	Global Returnable Asset Identifier	25B
8004	Global Individual Asset Identifier	1B, 5B
8005	Price Per Unit of Measure	n/e
8006	Identification of the Component of an Article	19P
8007	International Bank Account Number	n/e
8008	Date and Time of Production	n/e
8018	Global Service Relation Number	n/e
8020	Payment Slip Reference Number	n/e
8100	Coupon Extended Code - Number System Character and Offer	n/e
8101	Coupon Extended Code - Number System Character, Offer, and End of Offer	n/e
8102	Coupon Extended Code - Number System Character preceded by zero	n/e
8110	Coupon Code Identification for Use in North America	n/e
90	Information Agreed Between Trading Partners	Y
91	Intra-Company Internal	Y
92	Intra-Company Internal	Y
93	Intra-Company Internal	Y
94	Internal	Y
95	Internal - Carriers	3K, 6K, 12K, 1Z, 2Z, 4Z
96	Internal - Carriers	3K, 6K, 12K, 1Z, 2Z, 4Z
97	Intra-Company Internal	Y
98	Intra-Company Internal	Y
99	Internal	Y
DI	Interim Assignment - ANSI MH10.8.2 Data Identifiers (ISO 28219)	*ANS MH10.8.2 DIs*

(*) : To indicate only year and month, DD can be filled with "00"
(**) : Plus one digit for length indication
(***) : Plus one digit for decimal point indication
(+) : The definition of 400 has been modified to allow order, release, and line numbers, at the discretion of the issuer

Date Value Representation:

a	alphabetic characters (chars)	n	numeric chars	an	alphanumeric chars
n3	3 numeric chars, fixed length	an3	3 alpha-numeric chars, fixed length	n...3	up to 3 numeric chars
a...3	up to 3 alphabetic chars	an...3	up to 3 alphanumeric chars	s	sequence in the process

SECTION V
SHORT TITLES

The Short Titles listed herein are for guidance of developing standards. This list is not comprehensive or mandatory.

SHORT TITLES

When printing bar codes (or 2D symbols) it is recommended that each bar code have human readable text printed above the bar code (or adjacent to each 2D symbol) to identify what type of data is contained in the bar code (or 2D symbol). This is called a "short title" and should resemble one of the formats shown in Figure V-1.

Figure V-1: Examples of recommended formats for printing short titles

This Section lists the recommended short titles for some of the most common data identifiers.

The Short Titles listed herein are for guidance of developing standards. This list is not comprehensive or mandatory.

SECTION V.A
ANSI MH10.8.2 DI SHORT TITLES
(the following list is not a complete list of all identifiers)

DI	SHORT TITLE	Description
B	CONT TYPE	Container type
1B	CONT ID	Returnable container identification code
C	PART # Cont.	Continuation of an Item Code
D	DATE	Date
14D	EXP DATE	Expiration Date (YYYYMMDD)
16D	PROD DATE	Production Date (YYYYMMDD)
J	LIC PLATE	Unique license plate number
1J	LIC PLATE-UNIT	Unique license plate assigned to a transport unit which is the lowest level of packaging, the unbreakable unit.
2J	LIC PLATE-MULTI	Unique license plate assigned to a transport unit which contains multiple packages.
K	CUST PO #	Order number assigned by Customer
1K	SPLR ORDER #	Order number assigned by Supplier
2K	SPLR SHIP ID	Shipment Identification Code assigned by Supplier/Shipper
3K	BOL/WB	Bill of Landing/Waybill Code assigned by Carrier
4K	CUST LINE	Line number of the order assigned by Customer
5K	CUST REL	Reference number assigned by the Customer to identify a Shipment Authorization (Release) against an established Purchase Order
6K	CARRIER PRO	PRO # Assigned by Carrier
14K	PO = LINE	Combined Order Number and Line Number in the format nn…nn=nn…n where a plus symbol (+) is used as a delimiter between the Order Number and Line Number.
15K	PULL SIG	Pull signal (e.g. KANBAN) Number
16K	DELINS	DELINS Number. Code assigned to identify a document containing delivery information.
1L	LOC	Location
4L	ORIGIN or COO	Country of Origin, two-character ISO 3166 country code
51L	FROM POST CODE	"Ship From;" – Location code defined by a postal authority (e.g., 5-digit and 9 digit ZIP codes identifying U.S. locations or 6-character postal codes identifying Canadian locations.
52L	TO POST CODE	"Ship To;" – Location code defined by a postal authority (e.g., 5-digit and 9 digit ZIP codes identifying U.S. locations or 6-character postal codes identifying Canadian locations.
54L	FROM POST CODE + CTRY	" Ship To;" – Location code defined by a postal authority (e.g., 5-digit and 9 digit ZIP codes identifying U.S. locations or 6-character postal codes identifying United Kingdom locations) followed by two character ISO 3166 country code (e.g. US or GB)
55L	TO POST CODE+CTRY	" Ship From;" – Location code defined by a postal authority (e.g., 5-digit and 9 digit ZIP codes identifying U.S. locations or 6-character postal codes identifying United Kingdom locations) followed by two character ISO 3166 country code (e.g. US or GB)
P	CUST PART or CUST ITEM	Item Identification Code assigned by Customer
1P	SPLR PART or SPLR ITEM	Item Identification Code assigned by Supplier`

DI	SHORT TITLE	Description
2P	EC #	Code assigned to specify the revision level for an Item (e.g., engineering change)
10P	HAZMAT CODE	Hazardous Material Code as defined by ANS X12.3 (Version 003000) in the format Data Element 208 (1-character code qualifier) followed by Data Element 209 (Hazardous Material Code)
11P	CLEI	10-character CLEI Code for telecommunications equipment
Q	QTY	Quantity, Number of Pieces or Amount (numeric only) (unit of measure and significance mutually defined)
1Q	THEO LGTH or THEO WT	Theoretical Length/Weight (numeric only)
2Q	ACT WT	Actual Weight (numeric only)
3Q	U/M	Unit of Measure, as defined by the two character ANS X12.3 (Version 003000) Data Element Number 355 Unit of Measurement Code
7Q	QTY + U/M	Quantity, Amount, or Number of Pieces in the format: Quantity followed by the two character ANS X12.3 (Version 003000) Data Element Number 355 Unit of Measurement Code
13Q	N OF X	# of # ("this is the nth piece of x pieces in this shipment"). Presented in the format "n/x:", where the "/"(slash) is used as a delimiter between two values. See Annex C.6.3 for further information.
S	SERIAL	Serial number or code assigned by the Supplier to an entity for its lifetime, (e.g.,) computer serial number, tractability number, contract tool identification)
2S	ASN ID	Advance Shipment Notification (ASN) Shipment ID (SOID) corresponds to ANS ASC X12 Data Element 396
3S	PKG ID	Unique Package Identification assigned by Supplier (lowest level of packaging which has a package ID code shall contain like items)
4S	PKG ID-MASTER-LIKE	Package Identification assigned by Supplier to master packaging containing like items on a single customer order
5S	PKG ID-MASTER MIXED	Package Identification assigned by Supplier to master packaging contain unlike items on a single customer order
6S	PKG ID-MASTER-LIKE MULTI	Package Identification assigned by Supplier to master packaging containing like items on over multiple customer orders
7S	PKG ID-MASTER MIXED MULTI	Package Identification assigned by supplier to master packaging containing unlike items on over multiple customer orders
T	CUST LOT or CUST BATCH or CUST HEAT	Tractability Number assigned by the Customer to identity/trace a unique group of entities (e.g., lot, batch, heat)
1T	SPLR LOT or SPLR BATCH or SPLR HEAT	Traceability Number assigned by the Supplier to identify/trace a unique group of entities (e.g. lot, batch, heat)
V	CUST ASG SPLR ID	Supplier Code assigned by Customer
1V	SPLR ASG SPLR ID	Supplier Code assigned by Supplier
12V	DUNS MFR ID	DUNS number identifying manufacturer
13V	DUNS SPLR ID	DUNS number identifying supplier
14V	DUNS CUST ID	DUNS number identifying customer
15V	SHIPPER	Carrier assigned shipper number

SECTION V.B
GS1 AI SHORT TITLES
(the following list is not a complete list of all identifiers)

SHORT TITLE	AI	Description
SSCC	**00**	Serial Shipping Container Code
GTIN	**01**	Global Trade Item Number
CONTENT	**02**	GTIN of trade items contained in a logistic unit
BATCH/LOT	**10**	Batch or Lot number
PROD DATE	**11**	Production Date (YYMMDD) (To indicate only month and year - DD can be filled with "00"
DUE DATE	**12**	Due Date (YYMMDD) (To indicate only month and year - DD can be filled with "00"
PACK DATE	**13**	Packaging Date (YYMMDD) (To indicate only month and year - DD can be filled with "00"
SELL BY or BEST BEFORE	**15**	Minimum Durability Date (YYMMDD) (Quality) (To indicate only month and year - DD can be filled with "00")
USE BY or EXPIRY	**17**	Maximum Durability Date (YYMMDD) (Safety) (To indicate only month and year - DD can be filled with "00")
VARIANT	**20**	Product Variant
SERIAL	**21**	Serial Number
QTY/DATE/BATCH	**22**	HIBCC - Quantity, Date, Batch, and Link
ADDTIONAL ID	**240**	Additional Product Identification assigned by the Manufacturer
CUST. PART NO.	**241**	Customer Part Number
SECONDARY SERIAL	**250**	Secondary Serial Number
VAR. COUNT	**30**	Variable Count
NET WEIGHT (kg)	**310***	Net Weight, Kilograms (Plus one digit for decimal point indication)
LENGTH (m)	**311***	Length or 1st dimension, Meters (Plus one digit for decimal point indication)
WIDTH (m)	**312***	Width, Diameter, or 2nd dimension, Meters (Plus one digit for decimal point indication)
DEPTH (m)	**313***	Depth, Thickness, Height, or 3rd dimension, Meters (Plus one digit for decimal point indication)
AREA (m^2)	**314***	Area, Square Meters (Plus one digit for decimal point indication)
NET VOLUME (l)	**315***	Volume, Liters (Plus one digit for decimal point indication)
NET VOLUME (m^3)	**316***	Volume, Cubic Meters (Plus one digit for decimal point indication)
NET WEIGHT (lb)	**320***	Net Weight, Pounds (Plus one digit for decimal point indication)
LENGTH (i)	**321***	Length or 1st dimension, Inches (Plus one digit for decimal point indication)
WIDTH (i)	**324***	Width, Diameter, or 2nd dimension, Inches (Plus one digit for decimal point indication)
HEIGHT (i)	**327***	Depth, Thickness, Height, or 3rd dimension, Inches (Plus one digit for decimal point indication)
GROSS WEIGHT (kg)	**330***	Gross Weight, Kilograms (Plus one digit for decimal point indication)
GROSS WEIGHT (lb)	**340***	Gross Weight, Pounds (Plus one digit for decimal point indication)
LENGTH (i), log	**341***	Length or 1st dimension, Inches (Plus one digit for decimal point indication), Logistics

SHORT TITLE	AI	Description
WIDTH (i), log	**344***	Width, Diameter, or 2nd dimension, Inches (Plus one digit for decimal point indication), Logistics
HEIGHT (i), log	**347***	Depth, Thickness, Height, or 3rd dimension, Inches (Plus one digit for decimal point indication), Logistics
AREA (i^2)	**350***	Area, Square Inches (Plus one digit for decimal point indication)
AREA (i^2), log	**353***	Area, Square Inches Logistics (Plus one digit for decimal point
VOLUME (q)	**360***	Volume, Quarts (Plus one digit for decimal point indication)
GROSS VOLUME (q)	**362***	Gross Volume, Quarts (Plus one digit for decimal point indication)
VOLUME (i^3)	**364***	Volume, Cubic Inches (Plus one digit for decimal point indication)
GROSS VOLUME (i^3)	**367***	Gross Volume, Cubic Inches (Plus one digit for decimal point indication)
QUANTITY	**37**	Quantity (for use with 02)
ORDER NUMBER	**400**	Customer's Purchase Order Number
SHIPMENT NO.	**401**	Shipment Identification Number
SHIP TO LOC	**410**	Ship To: (Deliver To) Location Code Using GS1-13
SHIP TO POST	**420**	Ship To: (Deliver To) Postal Code Within a Single Postal Authority
SHIP TO POST	**421**	Ship To: (Deliver To) Postal Code Within 3-digit ISO Country Code Prefix
NSN	**7001**	NATO Stock Number
DIMENSIONS	**8001**	Roll Products - Width, Length, Core Diameter, Direction & Splices
GRAI	**8003**	Global Returnable Asset Identifier
GIAI	**8004**	Global Individual Asset Identifier

SECTION VI

HIERARCHICAL LEVELS - Data Identifier "F"

When the Data Identifier "F" is used in Data Identifier looping structures the format shall follow the format defined in this Section. See Annex L for usage rules of Data Identifiers 1F, 2F, and 3F for Returnable Packaging Items.

As the application of automatic data capture (ADC) storage media became more sophisticated it became possible to store more item data about more items in a single medium. Data capacities increased from the single data element linear bar code to concatenated symbols to two-dimensional symbols to high capacity RF tags to contact memory buttons to optical memory cards and micro compact disks. It became possible to store information about multiple orders on a shipment, multiple containers or pallets per order, multiple part numbers per order, multiple containers per part number, and multiple serial numbers per part number.

As this sophistication increased so increased the need to provide a structure for such data in order to ensure that there was an unambiguous relationship of a serial number (or lot number / expiration date) all of the way up to the order and shipment level. It would have been possible to create a unique structure for ADC media. However, the world of electronic data interchange (EDI) has faced this issue for many years. After careful analysis ASC MH 10/SC 8 decided to follow the lessons learned from the EDI community, namely the creation a structured looping of data.

The X12 EDI Ship Notice/Manifest (Transaction 856) is a hierarchical document, that is, the electronic document which can:

- Represent one or several shipments in a single Ship Notice/Manifest,
- Each shipment can consist of one or several orders in a single shipment,
- Each order can consist of one or several pallets (tares) in a single order,
- Each pallet can consist of one or several cartons (packs) in a single pallet,
- Each carton can consist of one or several inner packs (sub-packs) in a single carton,
- Each sub-pack can consist of one or several items in a single sub-pack, and
- Each item can consist of one or several components in a single item.

Data should be encoded at the hierarchical level to which it logically applies. For example, shipment data at the shipment level, order information at the order level, tare (pallet) information at the tare level, carton information at the carton level, etc. To avoid unnecessary data redundancy it may be preferable to encode data at a higher level. For example, if a shipment involves only one order, order information could be transmitted at the shipment level. Also, if the only package information needed is the label serial number (license plate) and there is one per item then the package data can be specified at the item level. As a general rule data can be specified at a higher level as long as it does not create confusion with similar data at the same level. Weights dimensions, quantities, and license plates are examples of data which are used in multiple levels and could create confusion if levels are combined.

The following example depicts the detail area of the Ship Notice/ Manifest transaction in the traditional manner.

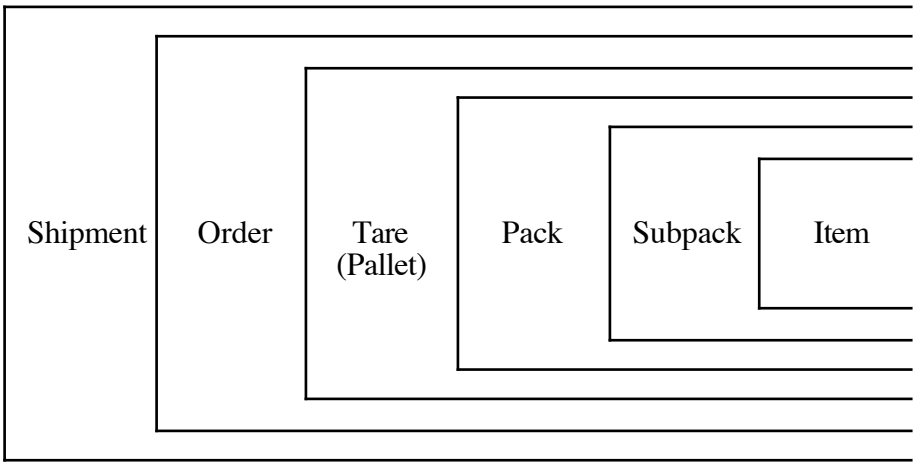

Figure VI – 1 – Typical X12 856 Nested Packaging Levels

The purpose of such structure looping is to facilitate the identification of dependencies among the content of related groups of data segments. Several methods existed, however, the SC 8 committee settled on the use of hierarchical structures similar to the ASC X12 EDI 856 Ship Notice/Manifest transaction.

Within the X12 856 transaction set the "HL segment" is comprised of four data elements (DE). These are

Table VI – 1 – ASC X12 856 "HL Segment"

DE Reference	DE Identifier	DE Name	DE Requirement	DE Type	DE Length (Min/Max)
HL01	628	Hierarchical ID Number	M	AN[1]	1/12
HL02	734	Hierarchical Parent ID Number	O	AN	1/12
HL03	735	Hierarchical Level Code	M	ID[2]	1/2
HL04	736	Hierarchical Child Code	O	ID	1/1

Note[1] – A string data element is a sequence of any characters from the character set and contains at least one non-space character. The significant characters shall be left justified. Leading spaces, when they occur, are presumed to be significant characters. In the actual data stream, trailing spaces should be suppressed. The representation for this data element is AN.

Note[2] – An identifier data element always contains a unique value from a single, predefined list of values that is maintained in ASC X12 or some other body recognized by ASC X12 and identified by a reference in Appendix A of X12.3 Data Element Dictionary. Trailing spaces should be suppressed. The representation for this data element type is ID.

The X12 856 HL segment is used to identify levels of detail information using a hierarchical structure, such as relating line-item data to shipment data and packaging data to line-item data. The 856 HL segment defines a top-down/left-right ordered structure.

HL01 shall contain a unique alphanumeric number for each occurrence of the HL segment in the transaction set. For example, HL01 could be used to indicate the number of occurrences of the HL segment in which case the value of HL01 would be "1" for the initial HL segment and would be incremented by one in each subsequent HL segment within the transaction.

HL02 identifies the hierarchical ID number of the HL segment to which the current HL segment is subordinate.

HL03 indicates the context of the series of segments following the current HL segment up to the next occurrence of an HL segment in the transaction. For example, HL03 is used to indicate that subsequent segments in the HL loop form a logical grouping of data referring to shipment, order, or item-level information.

HL04 indicates whether or not there are subordinate (or child) segments related to the current HL segment. ("0" indicates that there are no subordinate segments; "1" indicates that there are subordinate segments)

It would be possible to encode an entire EDI transaction into a machine-readable medium, however there is substantial overhead within EDI to facilitate the routing of the message. Since, in the case of machine-readable media, the medium accompanies the routed item the overhead is unnecessary information. And while the data carrying capacity of machine-readable media has increased substantially, wherever a systems designer can reduce the number of encoded characters, the better is the design.

ASC MH 10/SC 8 took the basic Hierarchical Level (HL) structure and made two modifications. Both involved the variable length nature of the EDI HL with each of the data elements separated by a data element separator versus a machine-readable media requirement for defined lengths and short fields. Since the committee did not wish to use separator characters, because of increasing the length of the field, fixed length data elements were used where ever possible. Further, the length of the Hierarchical ID Number was fixed at two (2). With the character set of 0-9 and A-Z, a length of 2 characters yields 1,296 permutations. Ninety-nine (99) and even thirty-six (36) permutations were considered ample in most cases, however several real-life examples of different parts with associated serial numbers caused the ASC MH 10/SC 8 to go to a second character position. The Hierarchical Child Code identifier and the Hierarchical Level Code identifier were swapped positionally since the Hierarchical Level Code was variable length. Placing the variable length field at the end of the composite field provided unambiguous meaning to each of the sub-fields.

This yielded the format for the Hierarchical Level Data Identifier “F”. The purpose of Data Identifier “F” is to identify dependencies among the content of hierarchically related groups of data segments. The structure of this DI is as follows with all parts required:

Table VI – 2 – ANS MH10.8.2 Data Identifier “F” Structure

Part	String (AN) or Identifier (ID)	Length
Hierarchical ID Number	AN	2[1]
Hierarchical Parent ID Number	AN	2[1]
Hierarchical Child Code	ID	1
Hierarchical Level Code	ID	1/2

Note[1] – With the character set of 0-9 and A-Z, a length of 2 characters yields 1,296 permutations

While the complete set of Hierarchical Level Code identifiers can be found in ANS X12, Data Element 735, the following represent what ASC MH 10/SC 8 considers to be the most commonly used identifiers:

Table VI – 3 – Commonly Used Hierarchical Level Codes

Level	Identifier	Description
Shipment	S	Data that applies to the whole shipment, such as bill of lading number, lading quantity, supplier code, etc.
Order	O	Data related to the sender's order and the associated receiver's original purchase order.
Tare	T	The tare level is used to identify pallets. If there are no identifiable pallets, this level may be omitted.
Pack	P	The pack level is used to identify the cartons within which the item is shipped, e.g., label serial numbers. In most cases there will be some sort of packs.
Sub-pack	Q	Data related to a grouping of identifiable packages within the pack level. Note that this level is only used when the inner pack has identifiable numbers for each inner pack.
Item	I	Stock keeping unit (SKU) identification data.
Component	F	Data related to the manufacturer's component
Serial #	X	Data related to the manufacturer's serial number

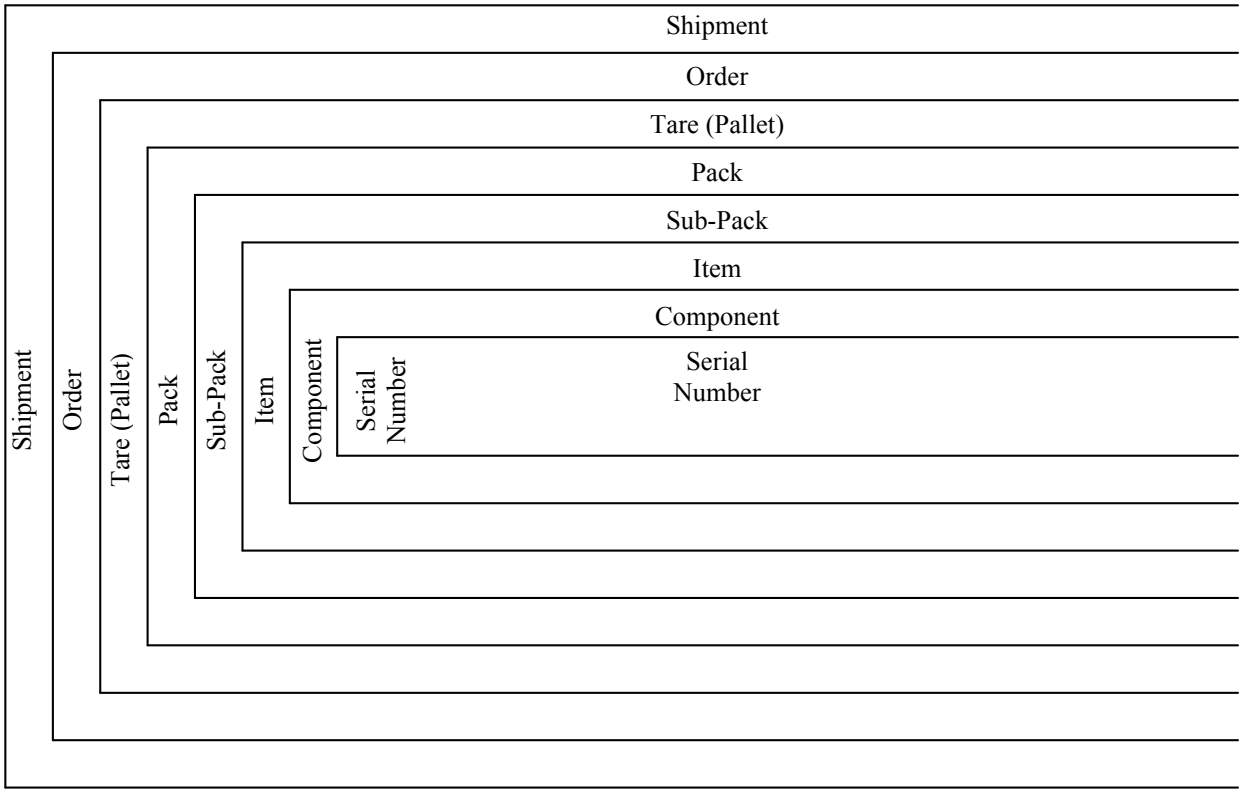

Figure VI – 2 – Typical MH 10/SC 8 Nested Packaging Levels

Consequently, for machine-readable media the structure “F08041P” would mean:

“F”	Data Identifier
08	Level of this hierarchy, e.g., a case on a pallet
04	Level of the parent hierarchy, e.g., the pallet
1	Yes, there are children to the case
P	Pack

Consider the following structure:

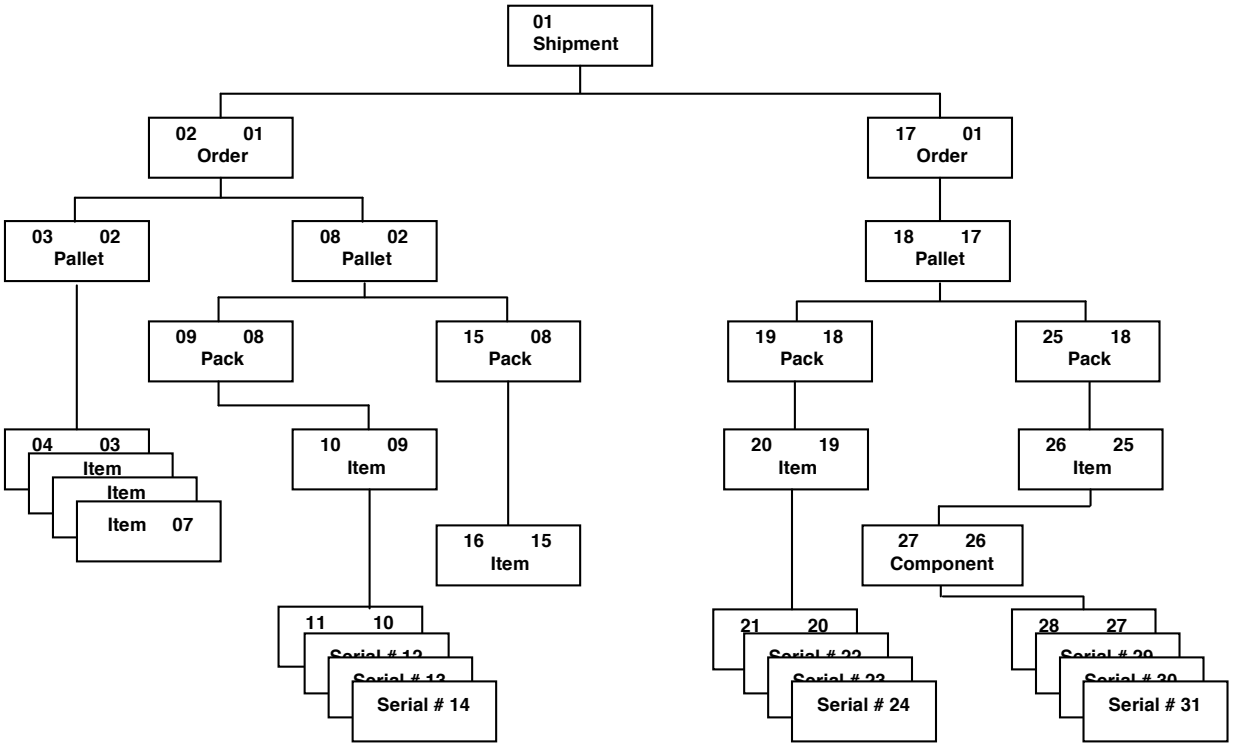

Figure VI – 3 – Hierarchical Levels

Using DI “F” the data stream would be as follows:

[]>$^{R}_{S}$06$^{G}_{S}$	F11100X$^{G}_{S}$	F21200X$^{G}_{S}$
F01001S$^{G}_{S}$	25SUN043325711Serial11$^{G}_{S}$	25SUN043325711Serial21$^{G}_{S}$
2QShipment01$^{G}_{S}$	25SUN043325711Serial12$^{G}_{S}$	25SUN043325711Serial12$^{G}_{S}$
F02011O$^{G}_{S}$	25SUN043325711Serial13$^{G}_{S}$	25SUN043325711Serial23$^{G}_{S}$
KOrder02$^{G}_{S}$	25SUN043325711Serial14$^{G}_{S}$	25SUN043325711Serial44$^{G}_{S}$
F03021T$^{G}_{S}$	F15081P$^{G}_{S}$	F25181P$^{G}_{S}$
JUN043325711Pallet03$^{G}_{S}$	JUN043325711Pack15$^{G}_{S}$	JUN043325711Pack25$^{G}_{S}$
F04030I$^{G}_{S}$	F16150I$^{G}_{S}$	F26251I$^{G}_{S}$
25PUN043325711Item04$^{G}_{S}$	25PUN043325711Item16$^{G}_{S}$	25PUN043325711Item26$^{G}_{S}$
25PUN043325711Item05$^{G}_{S}$	F17011O$^{G}_{S}$	F27261F$^{G}_{S}$
25PUN043325711Item06$^{G}_{S}$	KOrder17$^{G}_{S}$	25PUN043325711Comp27$^{G}_{S}$
25PUN043325711Item07$^{G}_{S}$	F18171T$^{G}_{S}$	F28270X$^{G}_{S}$
F08021T$^{G}_{S}$	JUN043325711Pallet17$^{G}_{S}$	25SUN043325711Serial28$^{G}_{S}$
JUN043325711Pallet08$^{G}_{S}$	F19181P$^{G}_{S}$	25SUN043325711Serial29$^{G}_{S}$
F09081P$^{G}_{S}$	JUN043325711Pack19$^{G}_{S}$	25SUN043325711Serial30$^{G}_{S}$
JUN043325711Pack09$^{G}_{S}$	F20191I$^{G}_{S}$	25SUN043325711Serial31$^{R}_{S}$$^{E}_{O}$$_{T}$
F10091I$^{G}_{S}$	25PUN043325711Item20$^{G}_{S}$	
25PUN043325711Item10$^{G}_{S}$		

Table VI – 4 – Reducing Figure VI – 3 to a Data Stream Using DI “F”

Another example from the telecommunication industry. Presume the following EDI data:

EDI DATA	EXPLANATION
ST~856~000000001|	ASN Transaction Set - Transaction Set Control #000000001
BSN~00~000002~20010207~1001|	Original Ship Notice #000002Created 02/07/01 at 10:01 am
DTM~011~20010207|	Shipped on 2/07/01
HL~001~~S|	Hierarchical Segment #1 - Shipment Level
TD5~~2~HMES	Shipped via USF Holland
REF~BM~104462	Bill of Lading = 104462
REF~CN~6783222	Carrier Pro # = 6783222
NI~ST~SBC|	Ship to Name
N3~1700 HAZEL DELL RD|	Ship to Address
N4~SPRINGFIELD~IL~627035258|	Ship to City, State, Zip Code (9 digits)
HL~002~001~O|	Hierarchical Segment #2- Order Level Subordinate to HL001
PRF~AB~347554	P.O. Number = AB347554
REF~VN~V11234345	Supplier’s Order No. = V11234345
REF~IV,A00001|	Invoice No. A00001
REF~PK~B12456|	Packing List No. B12456
HL~003~002~I|	Hierarchical Segment #3, Item Level Subordinate to HL002
LIN~0001~IN~102421930|	SBC’s Product Identifier = 102421930
SN1~001~600~FT|	Total qty. shipped = 600 ft
PRF~AB347554~~~~0001|	P.O. Number = AB34755 - Item = 0001

EDI DATA	EXPLANATION
CLD~02~600|	Number of reels = 2 Number of units shipped on reels = 600 (feet as in SN103)
REF~LS~ABCD+40000|	3S Bar Code Label = ABCD+40000
REF~SE~AS23D145|	Cable Reel Serial # = AS23D145
REF~MR~EEE|	Cable Reel Type = EEE
REF~LS~ABCD+40001|	3S Bar Code Label = ABCD+40001
REF~SE~AS23D146|	Cable Reel Serial # = AS23D146
REF~MR~EEE|	Cable Reel Type = EEE
HL~004~002~I|	Hierarchical Segment #4 - Item Level Subordinate to HL002
LIN~0002~VN~TLT395|	Vendor Part #TLT395
SN1~002~2~EA|	Total qty. shipped = 2EA
PRF~AB347554~~~~0003|	P.O. Number = AB34755, Item = 0003
CLD~02~2|	Number of containers = 2 Number of units shipped in containers = 2
REF~LS~ABCD+40002|	3S Bar Code Label = ABCD+40002
REF~LS~ABCD+40003|	3S Bar Code Label = ABCD+40003
CTT~4~602|	HL Segments = 4
	Total Shipped Quantities = 602
SE~35~000000001|	Segments = 35 Transaction Set Control # = 000000001

X12 856 EDI Data	Explanation	Data Identifier Data
DTM~011~20010207|	Shipped on 2/07/01	5D010207011
HL~001~~S|	Hierarchical Segment #1-Shipment Level	F01001S
TD5~~2~HMES|	Shipped via USF Holland	(See Pro #)
REF~BM~104462|	Bill of Lading = 104462	3K104462
REF~CN~6783222|	Carrier Pro # = 6783222	12KHMES6783222
NI~ST~SBC|	Ship to Name	NI~ST~SBC
N3~1700 HAZEL DELL RD|	Ship to Address	N3~1700 HAZEL DELL RD
N4~SPRINGFIELD~IL~ 627035258|	Ship to City, State, Zip Code (9 digits)	N4~SPRINGFIELD~IL~ 627035258
HL~002~001~O|	Hierarchical Segment #2- Order Level Subordinate to HL001	F02011O
PRF~AB~347554|	P.O. Number = AB347554	KAB347554
REF~VN~V11234345|	Supplier's Order No. = V11234345	1KV11234345
REF~IV,A00001|	Invoice No. A00001	10KA00001
REF~PK~B12456|	Packing List No. B12456	11KB12456
HL~003~002~I|	Hierarchical Segment #3 - Item Level Subordinate to HL002	F03020I
LIN~0001~IN~102421930|	SBC's Product Identifier = 102421930	P102421930
SN1~001~600~FT|	Total qty. shipped = 600 ft	7Q600FT
PRF~AB347554~~~~0001|	P.O. Number = AB347554Item = 0001	14KAB347554+0001
CLD~02~600|	Number of reels = 2 - Number of units shipped on reels = 600 (feet as in SN103)	7Q2RE 7Q600FT
REF~LS~ABCD+40000|	3S Bar Code Label = ABCD+40000	3SABCD+40000
REF~SE~AS23D145|	Cable Reel Serial # = AS23D145	SAS23D145
REF~MR~EEE|	Cable Reel Type = EEE	BEEE
REF~LS~ABCD+40001|	3S Bar Code Label = ABCD+40001	3SABCD+40001
REF~SE~AS23D146|	Cable Reel Serial # = AS23D146	SAS23D146
REF~MR~EEE|	Cable Reel Type = EEE	BEEE
HL~004~002~I|	Hierarchical Segment #4 - Item Level Subordinate to HL002	F04020I
LIN~0002~VN~TLT395|	Vendor Part #TLT395	1PTLT395
SN1~002~2~EA|	Total qty. shipped = 2EA	Q2
PRF~AB347554~~~~0003|	P.O. Number = AB347554 - Item = 0003	14KAB347554+0003
CLD~02~2|	Number of containers = 2\ - Number of units shipped in containers = 2	7Q2CH
REF~LS~ABCD+40002|	3S Bar Code Label = ABCD+40002	3SABCD+40002
REF~LS~ABCD+40003|	3S Bar Code Label = ABCD+40003	3SABCD+40003
484 characters (not including address information [N1, N3, N4])		285 characters (not including address information [N1, N3, N4])

Table VI – 5b – Associating Data Identifier Data with X12 EDI Data (continued)

The telecommunication industry concluded that they do not require the Ship To information encoded in the machine-readable media that would accompany the shipment. If the complete EDI transaction were encoded, including the 71 characters associated with the ST, BSN, CTT, and SE segments and the 161 characters associated with the ISA, GS, GE, and IEA segments the complete EDI message would have been 716 (484+71+161) characters in length as opposed to the 285 when encoded with Data Identifiers.

When this data would be encoded using the Hierarchical Looping Data Identifier “F”, the data would appear as follows:

[)>$^{R}_{S}$06$^{G}_{S}$
F01001S$^{G}_{S}$
5D010207011$^{G}_{S}$
3K104462$^{G}_{S}$
12KHMES6783222$^{G}_{S}$
F02011O$^{G}_{S}$
KAB347554$^{G}_{S}$
1KV11234345$^{G}_{S}$
10KA00001$^{G}_{S}$
11KB12456$^{G}_{S}$
F03020I$^{G}_{S}$
P102421930$^{G}_{S}$
7Q600FT$^{G}_{S}$
14KAB347554+0001$^{G}_{S}$
7Q2RE$^{G}_{S}$
7Q600FT$^{G}_{S}$
3SABCD+40000$^{G}_{S}$
SAS23D145$^{G}_{S}$
BEEE$^{G}_{S}$
3SABCD+40001$^{G}_{S}$
SAS23D146$^{G}_{S}$
BEEE$^{G}_{S}$
F04020I$^{G}_{S}$
1PTLT395$^{G}_{S}$
Q2$^{G}_{S}$
14KAB347554+0003$^{G}_{S}$
7Q2CH$^{G}_{S}$
3SABCD+40002$^{G}_{S}$
3SABCD+40003$^{R}_{S}$$^{E}_{O}$$_{T}$

This Annex is not part of American National Standard ANSI MH10.8.2

ANNEX A

QUICK REFERENCE TO DATA INDENTIFIER (DI) CATEGORIES

OUTLINE OF DEFINED CATEGORIES

CATEGORY 0	Special Characters Employed as Data Identifiers
CATEGORY 1	Reserved
CATEGORY 2	Container Information
CATEGORY 3	Field Continuation
CATEGORY 4	Date
CATEGORY 5	Environmental Factors
CATEGORY 6	Looping
CATEGORY 7	Reserved
CATEGORY 8	Human Resources
CATEGORY 9	Reserved
CATEGORY 10	License Plate
CATEGORY 11	Transaction Reference
CATEGORY 12	Location Reference
CATEGORY 13	Maintenance Codes
CATEGORY 14	Industry Assigned Codes
CATEGORY 15	Reserved
CATEGORY 16	Item Information
CATEGORY 17	Measurement
CATEGORY 18	Miscellaneous
CATEGORY 19	Traceability Number for an Entity
CATEGORY 20	Traceability Number for Groups of Entities
CATEGORY 21	UPU / MH 10/SC8/WG2 Agreed Upon Codes
CATEGORY 22	Party to the Transaction
CATEGORY 23	Activity Reference
CATEGORY 24	Reserved
CATEGORY 25	Internal Applications
CATEGORY 26	Mutually Defined

ALPHABETICAL LISTINGS OF ASSIGNED CATEGORIES

(This Annex is not part of American National Standard ANSI MH10.8.2.)

ANNEX B

ANNOTATED LISTING OF ASSIGNED DATA INDENTIFIER (DI) CATEGORIES

ANNOTATED LISTING OF ASSIGNED CATEGORIES

ACTIVITY REFERENCE **CATEGORY 23**
This category relates to work activities, such as Work Order, Operation and Sequence numbers. It should not be confused with Category 11 (Transaction Reference), which relates to purchasing transactions.

CONTAINER INFORMATION **CATEGORY 2**
This category relates to identification of returnable containers such as compressed gas cylinders, wire reels, transportation equipment and other returnable-type containers. While many of these numbers are serial numbers, this category exists to provide an easy distinction between container serial number and product or label serial number referenced in
Category 19 (Traceability Number for an Entity).

DATE **CATEGORY 4**
This category relates to a variety of date structures, as well as to the significance of the date (e.g., Date of Manufacture or Expiration Date).

ENVIRONMENTAL FACTORS **CATEGORY 5**
This category relates to identification of environmental issues such as temperature, air pressure, wind speed, and similar measurements. Where Category 5 defines environmental measurements, Category 17 defines physical measurements.

FIELD CONTINUATION **CATEGORY 3**
This category relates to the continuation of data from a defined field which must be broken into two symbols because of space or other constraints. Only some of the assigned DI fields have valid continuation assignments.

HUMAN RESOURCES **CATEGORY 8**
This category relates to personnel identification.

INDUSTRY ASSIGNED CODES **CATEGORY 14**
This category relates to code or numbering systems that are controlled by and specific to a specific industry or governmental agency (e.g., NATO Stock Number). This allows for unambiguous identification of those code systems within the ANSI MH10.8.2 DI framework without necessitating the assignment of unique ANSI MH10.8.2 DIs for those items that have little or no relevance to those outside that industry or governmental agency.

INTERNAL APPLICATIONS **CATEGORY 25**
This category relates to the use of DIs for purposes that will remain within a closed system and for which a valid ANSI MH10.8.2 DI cannot provide unambiguous reference. For use within a single manufacturing facility, for example, the use of the Internal Applications DI (Y) could precede any other ANSI MH10.8.2 DI which could be defined, in that instance, for a purpose which is not in conformance with these guidelines.

ITEM INFORMATION **CATEGORY 16**
This category relates to the identification or characteristics of an item (see definitions), such as its Part Number, Manufacturing Revision Level or its Classification as a Hazardous Material. An item is something that is not identified as a unique entity but rather as representative of all other like items (see Definitions for further information). Additional DIs (20P-24P and 30P-34P) are set aside for descriptive information not otherwise provided for and which is defined between trading partners or intended for internal use (but with messages that will leave the system, precluding the use of a Category 25 DI). This category should not be confused with Category 19, Traceability Number for an Entity, nor Category 20, Traceability Number for a Group of Entities, both of which provide for identification of unique entities (see definitions).

LICENSE PLATE **CATEGORY 10**
This category relates to a worldwide unique identification of a transport unit or a unitized load (e.g., shipping container or pallet). Each DI is comprised of a unique Issuing Agency Code (IAC) assigned pursuant to ISO/IEC 15429, a world-wide unique organizational/entity/company identification number assigned by the IAC, and a unique transport unit/unitized load number assigned by the organization, entity, or company[9].

LOCATION **CATEGORY 12**
This category relates to either a physical location that is used as a reference point (such as a Shelf Location) or to a physical location that is used as a destination reference (such as a Ship To address). Of particular note are the assignments 51L-52L and 54L-55L that relate to postal codes used as shipping addresses. These two sets of DIs provide for both domestic and international use (with an ISO country code suffix).

LOOPING **CATEGORY 6**
This category relates to the parent/child relationship between various fields of data, using pre-existing techniques from electronic data interchange. An example is where a shipment contains multiple orders over multiple pallets, multiple packages, multiple items, with multiple serial numbers. Using techniques described within Annex F of this document it is possible to relate a given serial number with a specific order.

MAINTENANCE CODES **CATEGORY 13**
This category identifies specific codes used in maintenance functions, including those functions expressed over time such as machine-on time, mean-time-between-failure, and the like.

MEASUREMENT **CATEGORY 17**
This category relates to physical dimensions, measures, quantity or monetary value of an item or group of items (may refer to entities as well). Of particular note is the assignment 7Q that is quantity followed by an ANSI Data Element 355 description of unit of measure. To indicate that there are n cartons in the shipment with x items per carton, either two 7Q fields can appear in the same message with appropriate ANSI modifiers or a 7Q can be used with a Q (generic quantity) with the significance mutually defined.

MISCELLANEOUS **CATEGORY 18**
This category relates to DIs that cannot otherwise be categorized (currently contains Return Authorization Codes).

MUTUALLY DEFINED **CATEGORY 26**
This category relates to data or information which has not been assigned a DI within this document and which trading partners need to include in their automatic identification application. The structure and significance of this information is to be agreed upon by all appropriate parties to the transaction.

PARTY TO THE TRANSACTION **CATEGORY 22**
This category relates to codes that identify all business entities that may be a party to a transaction (e.g., Vendor Number, Customer Number or Carrier Number).

SPECIAL CHARACTERS **CATEGORY 0**
This category relates to the use of a non-alpha, non-numeric character in the first data position of an automatic identification message (e.g., bar code) to identify the message as being controlled by a specific organization (e.g., Health Industry Business Communications Council, Uniform Code Council).

TRACEABILITY NUMBER FOR AN ENTITY **CATEGORY 19**
This category relates to the identification of a specific item (entity) in a unique manner for purposes of tracing that entity. Codes with this category DIs may identify a finished product or they may identify packaging that contains multiple entities if the packaging is what is being tracked. If a DI from this category is used, an identical message on another entity should never be found within the originating system. For example, a television's serial number is a traceability number for an entity, as is a unique number assigned to a carton to identify it in conjunction with an EDI transaction. This category should not be confused with Category 16 (Item Identification), which provides for

[9] Note: An exception within the License Plate category is the inclusion of "7J" Vehicle Registration License Plate Number (not unique without identification of country and issuing governmental region/authority)

identification of all like items (where an identical message would certainly the found within the same system), or with Category 20, which provides unique identification for groups of entities (see below).

TRACEABILITY NUMBER FOR GROUPS OF ENTITIES **CATEGORY 20**

This category relates to the identification of a lot, batch or other grouping of entities for purposes of tracing that group. Additional DIs (20T-24T and 30T-34T) have been set aside for additional information which is not otherwise provided for and which is mutually defined between trading partners or intended for internal use (but with messages which will leave the system, precluding the use of a Category 25 DI). This should not be confused with Category 19 (Traceability Number for an Entity) or Category 16 (Item Identification).

TRANSACTION REFERENCE **CATEGORY 11**

This category relates to the identification of agreements or correspondence that is involved in the sale, purchase or transportation of goods or services. This category is distinct from Category 23 (Activity Reference) that relates to the production of such goods and/or services.

UPU / MH 10/SC8/WG2 AGREED UPON CODES **CATEGORY 21**

This category relates to a set of identifiers (“5U” to “55U”) that may be unique to the nature of the business of the United Postal Union (UPU) postal authorities that might not otherwise be used within the supply chain. The agreement between the UPU and ANSI MH10/SC 8/WG 2 is such that the UPU will endeavor to use DIs common to the rest of the marketplace. Only where there is a unique postal requirement for a unique DI, UPU may utilize one or more of the Category 21 DIs with the collaboration of ANSI MH10/SC 8/WG 2.

(This Annex is not part of American National Standard ANSI MH10.8.2.)

ANNEX C

DATA IDENTIFIER (DI) APPLICATION NOTES

APPLICATION NOTES

The ANSI MH10.8.2 DI Standard addresses general requirements for Data Identifiers. Industry- or company-wide application standards will further define and regulate the use of any or all Data Identifiers in this document.

The basic structure of a ANSI MH10.8.2 DI is an alphabetic character preceded by 1, 2, 3 or no numeric digits. To decode a ANSI MH10.8.2 DI, software must parse the data up to the first alphabetic character and then evaluate that alphabetic character and the preceding numeric characters, if any.

However, it is recognized that some organizations will face implementation problems that cannot be fully covered in the general guidelines or that additional information on the intended use of certain of the DIs assigned in this document will be needed. The following application notes may be of some assistance.

The following topics are discussed in this Annex.

C.1 A CAUTION ON THE USE OF GS1 NUMBERS

When cited within this document, references to GS1vendor or part numbers, or a combination of them, shall not be deemed to imply any use that is governed by GS1.

A number of industries have mandated that their members secure GS1 numbers in order to provide a common vendor numbering system. However, many of these organizations also employ alphanumeric coding schemes and/or include additional information that is not provided for by any GS1 standard and, therefore, are not in compliance with GS1 specifications.

These applications are valid *only* for the respective industries which have issued standards which accept GS1 numbering in addition to other numbering systems which require alpha-numeric symbologies or which have otherwise mandated the use of these numbering systems.

In no case should ANSI MH10.8.2 DIs be used in conjunction with, or in place of, approved GS1symbols for retail or POS applications for which the GS1 Global Trade Item Number (GTIN) has been mandated. In all such cases, only the appropriate GS1standards and specifications shall be applicable.

Questions on the use of GS1 numbering systems and standards, as well as the use of the GS1 bar code symbologies, can be obtained from the respective agency (address listed in this document).

C.2 THE USE OF ANSI AND ISO DATA ELEMENT IDENTIFIERS

For some DI assignments, qualifiers (suffixes) are used to provide additional significance to the data in the message. These qualifiers are drawn from ANSI and ISO Electronic Data Interchange (EDI) standards. In all cases the current "Draft Standard Approved for Trial Use" shall be the authoritative document.

In some instances, American National Standards Institute (ANSI) X12.3 Data Element Qualifiers are used. In other instances, International Standards Organization (ISO) codes are used. ANSI MH10.8.2 would prefer to use internationally accepted (ISO) codes for all applications but ISO standards do not exist for all needs.

EDIFACT, the United Nations EDI Standard, does provide codes for applications for which ANSI standards are referenced. However, EDIFACT does not yet have a practical coordination and review body that could assign additional codes as needed.

Insofar as this will be a dynamic document that will evolve new assignments in order to meet the needs of automatic identification users around the world, it was felt that an organization, which did have a professional staff to be responsive to requests, was essential. For this reason, ANSI standards have been used where necessary.

C.3 DATE SIGNIFICANCE

Provisions are made for various data codings in Category 4. Most DIs pertain to a specific date structure (e.g., DDMMYY) but do not specify the significance of the date.

In many applications, the structure of the date is mandated but the significance of the date is mutually agreed between trading partners and assignments ("D"-"5D") may be used in these cases.

Further, when both the structure and significance of the date is mutually defined, the assignment "9D" may be used.

However, when the significance of the date must be included, the assignments "6D" and "7D" use an ANSI Qualifier following the date to indicate its significance. The following examples show how this might be applied.

Example:

Date Significance	**DI**/Data/**ANSI Qualifier**
Date of Manufacture (2-digit year, month, day)	**6D**890420**049**
Expiration Date (4-digit year, month, day)	**7D**20051231**036**

C.4 LOCATION CODING

The following topics are covered in this note. Location coding is covered in Category 12.
- "Ship From", "Ship To", "Ship For" location codes
- Multiple levels of location, marking.

C.4.1 Ship From, Ship To, Ship For

In order to facilitate automated sortation and routing of shipments, location codes for shipping locations have been provided. The assignments provides for three possible locations.
- Ship From
- Ship To
- Ship For (mutually defined)

There are two different sets of assignments for "Ship From" and "Ship To" location:

- Mutually defined or industry standard ("3L" & "2L")
- Postal code location ("51L" & "52L" and "54L" & "55L")

The use of mutually defined or industry standards will not be discussed here other than to note that the "Ship For" destination code (5L) will generally be printed by the supplier at the customer's request and used by the customer to facilitate automated internal routing of shipments. The "Ship For" code will, therefore, have significance only to the customer.

The use of postal authority codes (postal codes) does, however, merit some discussion. In this section, only the "open system" ANSI MH10.8.2 DIs will be discussed.

General Considerations

When postal codes are used which fall within the jurisdiction of a single postal authority (generally, the same country), there is no ambiguity of the location referred to. These are assignments "51L" ("Ship From") and "52L" ("Ship To").

However, postal coding systems around the world may present ambiguities to computer systems. For example, many European postal codes, as well as others around the world, are 4-digit numeric codes. Thus, the postal code "6300" could exist in more than one country. Without a means for identifying the country that administers that particular postal code, the data is meaningless.

Within Europe there is a postal convention that allows the inclusion of a country code preceding the numeric code. Following this convention, "CH-6300" refers to a Swiss (Confederation Helvetia) postal code.

Most postal authorities do not have such conventions, however, so another means of identifying the postal authority is needed - one that does not conflict with the European convention.

The ANSI MH10.8.2 DI Standard uses 2-character ISO country codes following the postal code for this purpose.

The following protocol is used in the ANSI MH10.8.2 DI Standard.

"Domestic" Postal Codes
If the shipment is within a single country or postal authority, use of the appropriate "domestic" DI ("51L" or "52L") preceding the postal code is all that is required. *For the European postal convention countries, the "domestic" postal code DIs may be used with the proper country prefix included in the data portion of the labeling device* (e.g., bar code label, RFID tag).

"International" Postal Codes
If the shipment is to move between countries or postal authorities, the appropriate "international" DI ("54L" or "55L") preceding the postal code will indicate that an ISO country code follows the postal code.

Example 1: "Domestic" shipments (within the same postal authority).

Location	City, Country	**DI**/Postal Code
"Ship From"	Zug, Switzerland	**51L**6300
"Ship To"	Geneva, Switzerland	**52L**1216

Example 2: "Domestic" shipments (within the European postal convention)

Location	City, Country	**DI**/Country/Postal Code
"Ship From"	Zug, Switzerland	**51L***CH*6300
"Ship To"	Brussels, Belgium	**52L***B*1150

Example 3: Shipment between postal authorities

Location	City, Country	**DI**/Postal Code/**ISO Qualifier**
"Ship From"	Zug, Switzerland	**54L**6300**CH**
"Ship To"	Morley, Western Australia	**55L**6062**AU**

NOTE: Italics and bold are used for emphasis and are not used in actual coding.

It should also be noted that the longest possible bar code (excluding start, stop and symbology check characters) will be 14 characters (3-character DI, 9-digit U.S.A. Zip Code, 2-character ISO country code).

C.4.2 Multiple Levels of Location Marking

Provision is made in this document for multiple levels of location marking ("1L", "20L"- "24L"). These are considered to be for internal or mutually defined use.

The "Location" assignment is considered to be "generic" and is kept to two characters to reduce symbol length.

For applications that require further differentiation or a hierarchical method of indicating location *and require that information in the DI,* the "First Level" through "Fifth Level" assignments is provided. An example of their use is indicated below.

Example 1: Hierarchical Location

Location Description	DI
Building Number	1L
File Storage Room Number	20L
File Cabinet Row Number	21L
File Cabinet Number	22L
File Cabinet Drawer Number	23L
File Number	24L

Example 2: Location Differentiation

Location Description	DI
Building Number	1L
Machine Tool Location Number	20L
Physical Plant Equipment Location Number	21L
Routing Location Number	22L
Asset Control Room/Location Number	23L
Mail Stop	24L

C.5 ITEM IDENTIFICATION

Product identification DIs are assigned in Category 16, "Item Information." Multiple levels of identification are provided for both supplier ("1P" and "30P"-"34P") and customer ("P" and "20P" - "24P").

The "1P" and "P" assignments are intended to be the most commonly used DIs. However, many business entities have additional requirements that suggest the use of additional DIs for product identification. The following examples show how they might be used.

Example 1: Multiple Product Characteristics (as assigned by supplier)

Description	DI
Shoe Style Number	1P
Length	30P
Width	31P
Color	32P
Material	33P
Trim	34P

Example 2: Multiple Product Identifications (as assigned by customer)

Description	DI
Part Number	P
Old Catalog Number	20P
New Catalog Number	21P
Additional information	22P
Additional information	23P
Additional information	24P

C.6 QUANTITY

Quantity, number of pieces, or “amount” DIs are assigned in Category 17, "Measurement." The following topics are covered in this section.

- Quantity followed by a unit of measure
- Monetary value followed by a unit of measure
- Number of cartons within a shipment

C.6.1 Quantity Followed by Unit of Measure

For applications in which the quantity that will be referred is unambiguous and clearly understood between trading partners, the assignment "Q" should be used. Other assignments exist for other, defined, measures.

However, where there is more than one quantity or where the unit of measure needs to be specified, the assignment "7Q" allows for qualification of the value through the use of an 2-digit ANSI Unit of Measure Code.

The unit of measure code immediately follows the data. Because of the ability to qualify the amount, more than one "7Q" message may be found on a single labeling device.

The following examples show how this could be applied.

Example: Quantity, Measure

Measure	**DI**/Data/**ANSI Qualifier**
Number of pieces in box (mutually defined)	**Q**144 (no qualifier)
Weight of each piece (in kilograms)	**7Q**21.25**KG**
Rated capacity (in kilowatt hours)	**7Q**I2**KH**
Overall length (in inches, decimal, nominal)	**7Q**35.6**ED**

C.6.2 Value

Provision is made for the definition of unit of value ("12Q") by using an ISO country/currency code following the data. The use of this DI must be mutually defined between trading partners. The following examples show how this could be applied.

Example: Value of Item

Description	**DI**/Data/**ISO Qualifier**
Value of each piece in U.S. Dollars ($12.75)	**12Q**12.75**USD**
or	
Value of shipment in U.S. Dollars ($14,500)	**12Q**I4500**USD**

C.6.3 Number of Carton Within Shipment

A DI has been assigned to allow information concerning the number of a carton within a shipment ("13Q"). The structure of the data follows the format:

n/x

where: *n* is the number of the carton within the shipment
/ is the separator between numeric fields (must be encoded)
x is the total number of cartons in the shipment.

Examples:

Description	**DI**/Data
5th carton in shipment of 6 cartons	**13Q**5/6
127th carton in shipment of 127 cartons	**13Q**I27/127

C.7 PACKAGING IDENTIFICATION

Package Identification DIs are assigned in Category 19, "Traceability Number for an Entity." These identifiers are used on labeling devices (e.g., trading partner bar code transaction labels) attached to packaging.

The following topics are discussed in this section.

- Master packaging identification - customer order reference
- Identification of lowest level of packaging

Packaging identification generally is a unique number that identifies that package from all other packages. This number is usually used in conjunction with a supplier identification to provide a completely unique number.

Master packs (sometimes referred to as "unit loads") are transport units either made up of a number of filled transport packages or items held together by pallet, slip sheet, strapping, etc. or comprised of a single large container expressly designed to make items suitable for transportation, stacking, and storage as a unit.

Many industry standards require lower levels of packaging identification (using a lower level DI) within Master Packs to complete a transaction process. Trading partners are encouraged to utilize the lowest level DI and configure shipments accordingly.

C.7.1 Master Pack Identification

Provision is made for identification of the following information on the master packaging label ("4S"-"7S").

- Whether items within the package are the same or different.
- Whether items within the package are covered by one customer order or more than one customer order.

Assignments "4S" and "5S"

Assignments "4S" and "5S" are used when the items in the shipment are covered under the same customer order. The "4S" DI is used when the items are the same. The "5S" DI is used when the items are not the same.

If there is no interest in identifying whether single or multiple customer orders are contained within the packaging *and there is a strong argument against using all four DIs,* then all shipments should be identified as being "on the same customer order" (i.e., not referenced) and "4S " and "5S " can be used.

Assignments "6S" and "7S"
The "6S" and "7S" DIs are used to indicate that the items in the package are covered by multiple customer orders. "6S" is used when the items are the same, "7S" when the items are not the same.

Implicit in the use of "6S" and "7S" is the assumption that "4S" and "5S" DIs will also be encountered by the reading system.

See the next section for information about labels at lower levels within master packaging.

C.7.2 Lowest Level of Packaging

In some instances, packaging identification labels (other than part number) will be affixed to packaging within a master pack. A DI is provided to indicate that no further levels of packaging identification will be found within the package ("3S").

It is assumed that "3S" will be affixed to packaging which contains like items and that no further scanning will be required for package tracking purposes.

It is assumed that "3S" will usually be placed on packaging that is intended for transport or storage and will contain sub-packs on which only item identification is found. "3S" labels will generally be found on intermediate packaging occurring between the Product Identification and Master Packaging. It is further assumed that the "3S" symbol will generally be found within a master pack which contains a DI from the range "4S - "7S".

C.8 LOT/BATCH IDENTIFICATION

Lot and batch identification DIs are assigned in Category 20, "Traceability Number for Groups of Entities." Multiple levels of identification are provided for both supplier ("T" and "30T"-"34T") and customer ("lT" and "20T"-"24T").

The "T" and "1T" assignments are intended to be the most commonly-used DIs. However, many business entities have additional requirements that suggest the use of additional DIs for product identification. The following examples show how they might be used.

Example: Multiple Lot/Batch Information (as assigned by supplier)

Description	DI
Lot Number	1T
Production Batch Number	30T
Testing Batch Number	31T
Shipment Lot Number	32T
Additional information	33T
Additional information	34T

C.9 ASSIGNMENT "4K"

"Line number of the order assigned by the Customer to identify a Purchasing Transaction." This DI refers to the physical line number of an order on which a large number of items are requested. In some trading relationships, master orders are issued which cover a specified period of time and products are released against the order over time. The process simplifies paperwork for routinely ordered items that are not to be shipped in a single lot.

In such an instance, a simple reference to an order number (e.g., Purchase Order, Work Order, etc.) is not sufficient. For these instances, the "4K" data refers to the specific line of the order in which the product or service is referenced.

The line number and order may refer to electronic or paper transactions.

C.10 ASSIGNMENT "18K" Structured Reference

Many data identifier allocations correspond to identifiers, (e.g., bar code) representations that are intended to be engraved or printed on, or affixed to, the physical objects they identify. Container identifiers (category B), License Plates (J), Item Identifiers (P), Traceability Numbers (S) fall into this category.

These identifiers are also commonly used in communications about the objects they identify. Where such communications are purely electronic, it is self evident that what is communicated is a reference to the object identified. However, particularly in the postal world and in logistics applications, there are situations in which it is desirable to communicate such reference information in the form of a bar code (or 2D symbol or RF tag) that is printed on or attached to a physical object other than the object which is identified.

In such cases, the data identifier corresponding to the type of identifier cannot be used to identify the data, since otherwise, an automated system would be unable to distinguish between the physical object identified and the object carrying a reference to it.

For example, in the domain of license plates, a number of items carrying, say, license plates JJ1, JJ5, JJ7 and JJ10 might be grouped, for transport purposes, into an aggregate carrying license plate 2JJ4 (or put into a container with Container Identifier 5BJ7. Bar codes (or 2D symbols) on the aggregate (or container) may need to list the content of the aggregate. They cannot use the license plate DI for this since, otherwise, an automated system might read one of the reference bar-codes, interpret it as the license plate attached to the referenced object, and process the aggregate as if it were the particular individual item concerned. A similar scenario may occur in postal processing, where batch cards (which may be physically indistinguishable from postal items) are used to list the identifiers of the items that comprise the batch.

The solution to this problem requires that there be a clear distinction between an identifier that is part of, or attached to, the object identified and an identifier reference. This can only be achieved by use of a different data identifier. For this, three possibilities have been identified:

1. create a separate DI, in the category concerned, for each case;
2. create a separate DI, in category K (transaction reference), for each case;
3. allocate a single category K DI, embedding both the referenced identifier and its original DI value into the data.

Of these, the first two call for the allocation of many DI's and risk confusion, since it would be impossible to maintain any consistency of correspondence between the numeric prefixes used for references and the prefixes for the original objects. Approach 3 is therefore proposed as being both simple and elegant.

Structure: identification code, license plate or traceability number for an object or entity, prefixed by the data identifier used for encoding that identification code on the object itself.

Example:
Suppose that a parcel has license plate, issued under the UPU Issuing Agency Code, JGBA123456789.

This will be encoded on the parcel, using Data Identifier J. The parcel label will thus carry a bar code, including the DI, specifically: JJGBA123456789.

The corresponding Structured Reference is thus JJGBA123456789. When encoded in a bar code or other media, it will be prefixed by the DI for a Structured Reference, i.e. as 18KJJGBA123456789.

Similarly, a bar code reference to an aggregate transport unit (DI 2J) with license plate JGBA456789123 would be encoded as 18K2JJGBA456789123.

C.11 Unique Identification of Items

The intended use of Data Identifier (DI) 25S is to indicate that the data following the DI represents a concatenated data string that uniquely identifies an item. The 25S data string is formed from two segments which are an 18V segment and a supplier assigned serial number segment. The serial number assigned by the supplier (designated by the 18V segment) must be unique for that supplier.

The 18V segment is as defined in section 1.

The serial number segment consists of a unique serial number for the Company Identification Number (CIN) in 18V. For companies that serialize within part number, and/or lot/batch, methods for creating unique item identification within the serial number segments are:

part number + serial number (unique for that part number for the CIN)
lot/batch number + serial number (unique within the lot/batch for the CIN)

Data strings following 18V should not be parsed to obtain the component data elements.

(This Annex is not part of American National Standard ANSI MH10.8.2.)

ANNEX D

ANSI X12.3
Data Element Number 355
Unit of Measure Code

ANSI X12.3 Data Identifier Dictionary
Code List 355 Unit of Measure

CODE	DEFINITION
01	Actual Pounds
02	Statute Mile
03	Seconds
04	Small Spray
05	Lifts
08	Heat Lots
10	Group
11	Outfit
12	Packet
13	Ration
14	Shot
15	Stick
24	Theoretical Pounds
26	Actual Tons
27	Theoretical Tons
31	Catchweight
50	Actual Kilograms
51	Actual Tonnes
53	Theoretical Kilograms
54	Theoretical Tonnes
56	Sitas
58	Net Kilograms
59	Parts Per Million
60	Percent Weight
61	Parts Per Billion
62	Percent Per 100 Hours
63	Failure Rate In Time
64	Pounds Per Square Inch Gauge
65	Coulomb (A Unit of Charge)
66	Oersteds
67	Siemens (A Unit of Admittance)
68	Ampere
69	Test Specific Scale
70	Volt
71	Volt-Ampere Per Pound
72	Watts Per Pound
73	Ampere Turn Per Centimeter
74	Milli Pascals
75	Cycles
76	Gauss
77	Mil
78	Kilogauss
79	Electron Volt
80	Pounds Per Square Inch (Absolute)
81	Henry (A Unit of Inductance)
82	Ohm (A Unit of Resistance)
83	Farad (A Unit of Capacitance)
84	Kilo Pounds Per Square Inch (KSI)
85	Foot Pounds
86	Joules
AA	Ball
AC	Acre
AM	Ampoule
AP	Aluminum Pounds Only
AS	Assortment
AY	Assembly
B2	Bunks
B3	Batting Pound
B4	Barrel, Imperial
B5	Billet
B6	Bun
B7	Cycles
B8	Board
B9	Batt
BA	Bale
BB	Base Box
BC	Bucket
BD	Bundle
BE	Beam
BF	Board Feet
BG	Bag
BH	Brush
BI	Bar
BJ	Band
BK	Book
BL	Block
BM	Bolt
BN	Bulk
BO	Bottle
BP	100 Board Feet
BQ	Brake horse power
BR	Barrel
BS	Basket
BT	Belt
BU	Bushel
BV	Bushel, Dry Imperial
BW	Base Weight
BX	Box
BY	British Thermal Unit (BTU)
BZ	Million BTUs

CODE	DEFINITION
C1	Composite Product Pounds (total weight)
C2	Carset
C3	Centiliter
C4	Carload
C5	Cost
C6	Cell
C7	Centipoise (CPS)
C8	Cubic Decimeter
C9	Coil Group
CA	Case
CB	Carboy
CC	Cubic Centimeter
CD	Carat
CE	Centigrade, Celsius
CF	Cubic Feet
CG	Card
CH	Container
CI	Cubic Inches
CJ	Cone
CK	Connector
CL	Cylinder
CM	Centimeter
CN	Can
CO	Count
CP	Crate
CQ	Cartridge
CR	Cubic Meter
CS	Cassette
CT	Carton
CU	Cup
CV	Cover
CW	Hundred Pound (CWT)
CX	Coil
CY	Cubic Yard
CZ	Combo
DA	Days
DB	Dry Pound
DB	Dry Pounds
DC	Disk (Disc)
DD	Degree
DE	Deal
DF	Dram
DG	Decigram
DH	Miles
DI	Dispenser
DK	Kilometers
DL	Deciliter
DM	Decimeter
DP	Dozen Pair
DR	Drum

CODE	DEFINITION
DS	Display
DT	Dry Ton
DZ	Dozen
E3	Inches, Fraction-Average
E4	Inches, Fraction-Minimum
E5	Inches, Fraction-Actual
E7	Inches, Decimal-Average
E8	Inches, Decimal-Actual
E9	English (Feet, Inches)
EA	Each
ED	Inches, Decimal-Nominal
EF	Inches, Fraction-Nominal
EM	Inches, Fraction-Minimum
EP	Eleven pack
EV	Envelope
EX	Feet, Inches and Fraction
EY	Feet, Inches
EZ	Feet and Decimal
FA	Fahrenheit
FC	1000 Cubic Feet
FM	Million Cubic Feet
FO	Fluid Ounce
FP	Pounds Per Square Foot
FT	Foot
GA	Gallon
GB	Gallons/Day
GG	Great Gross (Dozen Gross)
GH	One-half Gallon
GI	Imperial Gallons
GL	Grams Per Liter
GM	Grams Per Square Meter
GN	Gross Gallons
GR	Gram
GS	Gross
GY	Gross Yard
GZ	Gage Systems
HA	Hank (100 feet of rope)
HB	Hundred Boxes
HC	Hundred Count
HD	Half Dozen
HE	Hundredth of a Carat
HF	Hundred Feet
HG	Hectograms
HH	Hundred Cubic Feet
HI	Hundred Sheets
HJ	Horse power
HK	Hundred Kilograms
HL	Hundred Feet-Linear
HO	Hundred Troy Ounces
HP	Hundred Pounds
HR	Hours

CODE	DEFINITION
HS	Hundred Square Feet
HT	Half Hour
HU	Hundred
HV	Hundred Weight (Short)
HW	Hundred Weight (Long)
HY	Hundred Yards
IN	Inch
JB	Jumbo
JO	Joint
JR	Jar
JU	Jug
KA	Cake
KD	Kilograms Decimal
KE	Keg
KG	Kilograms
KH	Kilowatt Hour
KI	Kilograms/Millimeter Width
KK	100 Kilograms
KL	Kilograms/Meter
KM	Kilograms/Square Meter, Kilograms, Decimal
KN	Kilometer
KT	Kit
KV	Kelvin
KW	Kilograms Per Millimeter
LA	Pounds Per Cubic Inch
LB	Pound
LC	Linear Centimeter
LE	Lite
LF	Linear Foot
LG	Long Ton
LH	Labor Hours
LI	Linear Inch
LJ	Large Spray
LK	Link
LM	Linear Meter
LN	Length
LO	Lot
LP	Liquid Pounds
LR	Layer
LS	Lump Sum
LT	Liter
LY	Linear Yard
M1	Milligrams per Liter
M2	Millimeter-Actual
M3	Mat
M4	Monetary Value
M6	Milligrams/Square Inch

CODE	DEFINITION
MA	Machine/Unit
MB	Millimeter-Nominal
MC	Microgram
ME	Milligram
MF	Milligrams/Square Foot Per Side
MG	Metric Gross Tons
MH	Microns
MI	Metric
MJ	Minutes
MK	Milligrams Per Square Inch
ML	Milliliter
MM	Millimeter
MN	Metric Net Ton
MO	Months
MP	Metric Ton
MQ	1000 Meters
MR	Meter
MS	Square Millimeter
MT	Metric Long Ton
MU	Millicurie
MV	Number of Mults
MW	Metric Ton Kilograms
MX	Mixed
MY	Millimeter-Average
MZ	Millimeter-Minimum
NB	Barge
NC	Car
NL	Load
NM	Nautical Mile
NN	Train
NT	Trailer
NV	Vehicle
OL	Ounces Liquid
OP	Two-pack
OT	Overtime Hours
OZ	Ounces Avoirdupois
P1	Percent
P2	Pounds Per Foot
P3	Three-Pack
P4	Four-Pack
P5	Five-Pack
P6	Six-Pack
P7	Seven-Pack
P8	Eight-Pack
P9	Nine-Pack
PA	Pail
PB	Pair Inches
PC	Piece
PD	Pad
PE	Pounds Equivalent

CODE	DEFINITION
PF	Pallet (Lift)
PG	Pounds Gross
PH	Pack (Pak)
PI	Pitch
PJ	Pounds, Decimal-Pounds/Square Foot-Pound Gage
PK	Package
PL	Pallet/Unit Load
PM	Pounds-Percentage
PN	Pounds Net
PO	Pounds Per Inch of Length
PP	Plate
PR	Pair
PS	Pounds Per Square Inch
PT	Pint
PV	One-half Pint
PW	Pounds Per Inch of Width
PX	Pint, Imperial
PY	Peck, Dry US
PZ	Peck, Dry Imperial
Q1	Quarter (Time)
QD	Quarter Dozen
QR	Quire
QS	Quart, Dry US
QT	Quart
QU	Quart, Imperial
RA	Rack
RD	Rod
RE	Reel
RG	Ring
RK	Roll-Metric Measure
RL	Roll
RM	Ream
RN	Ream-Metric Measure
RO	Round
SA	Sandwich
SB	Square Mile
SC	Square Centimeter
SD	Solid Pounds
SE	Section
SF	Square Foot
SG	Segment
SH	Sheet
SI	Square Inch
SJ	Sack
SK	Split Tank Truck
SL	Sleeve
SM	Square Meter
SN	Square Rod
SO	Spool
SP	Shelf Package
SQ	Square
SR	Strip
SS	Sheet-Metric Measure
ST	Set
SU	Short Ton
SV	Skid
SW	Skein
SX	Shipment
SY	Square Yard
T1	Thousand Pounds gross
TA	Tenth Cubic Foot
TB	Tube
TC	Truck Load
TD	Therms
TE	Tote
TF	Ten Square Yards
TG	Gross Ton
TH	Thousand
TI	Thousand Square Inches
TJ	Thousand Square Centimeters
TK	Tank
TL	Thousand Feet-Linear
TM	Thousand Feet (Board)
TN	Net Ton
TO	Troy Ounce
TP	Ten Pack
TQ	Thousand Feet
TR	Ten Square Feet
TS	Thousand Square Feet
TT	Thousand Linear Meters
TU	Thousand Linear Yards
TV	Thousand Kilograms
TW	Thousand Pieces of Sheets
TX	Troy Pound
TY	Tray
TZ	Thousand Cubic Feet
UN	Unit
VI	Vial
VT	Voltage
WB	Wet Pound
WE	Wet Ton
WH	Wheel
WI	Weight Per Square Inch
WK	Week
WP	Pennyweight
WR	Wrap
WT	Wattage

CODE DEFINITION

YD Yard
YL 100 Linear Yards
YR Years
YT Ten Yards
ZZ Mutually Defined

Users should consider use of either X12.3 version 004000 or current DSTU (Draft Standard for Trial Use).
The list above is not comprehensive, but is representative of codes employed.
A full list of codes representing unit of measurement is available from:

DATA INTERCHANGE STANDARDS ASSOCIATION (X12 DISA)
7600 Leesburg Pike, Suite 430,
Falls Church, VA 22043 USA
ATTN: Manager, Publications and Standards
Voice: 703.970.4480
http://www.x12.org/

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
25 West 43rd Street
New York, NY 10036
(212) 642-4900
http://webstore.ansi.org/default.aspx

(This Annex is not part of American National Standard ANSI MH10.8.2)

ANNEX E

ANSI X12.3
Data Element Number 374
Date/Time Codes

ANSI X12.3 Data Identifier Dictionary
Code List 374 Date/Time Codes

CODE	DEFINITION
001	Cancel After This Date/Time
002	Delivery Requested On This Date/Time
003	Invoice Date/Time
004	Purchase Order Date/Time
005	Sailing Date/Time
006	Solid Date/Time
007	Effective Date/Time
008	Purchase Order Received
009	Process Date/Time
010	Requested Ship Date/Time
011	Shipped On This Date/Time
012	Terms Discount Due Date/Time
013	Terms Net Due Date/Time
014	Deferred Payment Date/Time
015	Promotion Start
016	Promotion End
017	Estimated Delivery Date/Time
018	Date/Time Available/Constructive Placement
019	Date/Time Unloaded
020	Check Date/Time
021	Charge Back Date/Time
022	Freight Bill Date/Time
023	Promotion Order Date/Time - Start
024	Promotion Order Date/Time - End
025	Promotion Ship Date/Time - Start
026	Promotion Ship Date/Time - End
027	Promotion Requested Delivery Date/Time - Start
028	Promotion Requested Delivery Date/Time - End
029	Promotion Performance Delivery Date/Time - Start
030	Promotion Performance Delivery Date/Time - End
031	Promotion Invoice Performance Delivery Date/Time - Start
032	Promotion Invoice Performance Delivery Date/Time - End
033	Promotion Floor Stock Protect Date/Time - Start
034	Promotion Floor Stock Protect Date/Time - End
035	Delivered On This Date/Time
036	Expiration Date/Time
037	Ship Not Before Date/Time
038	Ship Not Later Than Date/Time
039	Ship Week Of Date/Time
040	Status Date (After And Including)
041	Status Date (Prior And Including)
042	Superseded Date
043	Publication Date
044	Received On This Date
045	Cumulative Quantity Start Date
046	Cumulative Quantity End Date
047	Buyer's Local Time
048	Seller's Local Time
049	Confirmed Date
050	Received On This Date
051	Cumulative Quantity Start Date
052	Cumulative Quantity End Date
053	Buyer's Local Time
054	Seller's Local Time
055	Confirmed Date
056	Estimated Port Of Entry Date
057	Actual Port Of Entry Date
058	Customs Clearance Date
059	Inland Ship Date
060	Engineering Change Level Date
061	Cancel If Not Delivered By This Date
062	Blueprint Date
063	Do Not Deliver After This Date
064	Do Not Deliver Before This Date
065	1st Schedule Delivery Date
066	1st Schedule Ship Date
067	Current Schedule Delivery Date
068	Current Schedule Ship Date
069	Promised For Delivery (Date/Time)
070	Scheduled For Delivery (After And Including)
071	Requested For Delivery (After And Including)
072	Promised For Delivery (After And Including)
073	Scheduled For Delivery (Prior To And Including)
074	Requested For Delivery (Prior To And Including)
075	Promised For Delivery (Prior To And Including)
076	Scheduled For Delivery (Week Of)
077	Requested For Delivery (Week Of)
078	Promised For Delivery (Week Of)
079	Promised For Shipment (Date/Time)
080	Scheduled For Shipment (After And Including)

CODE DEFINITION

081 Requested For Shipment (After And Including)
082 Promised For Shipment (After And Including)
083 Scheduled For Shipment (Prior To And Including)
084 Requested For Shipment (Prior To And Including)
085 Promised For Shipment (Prior To And Including)
086 Scheduled For Shipment (Week Of)
087 Requested For Shipment (Week Of)
088 Promised For Shipment (Week Of)
089 Inquiry Date
090 Report Start Date
091 Report End Date
092 Contract Effective Date
093 Contract Expiration Date
094 Manufacturing Date
095 Bill of Lading Date
096 Date/Time Of Discharge
097 Transaction Creation Date
098 Bid (Effective) Date
099 Bid-Open Date (Date Bids Will Be Opened)
100 No Shipping Schedule Established As Of Date/Time
101 No Production Schedule Established As Of Date/Time
102 Expect To Ship By Date
103 Expect To Ship By Week Of Date
104 Revised Expect To Ship By Date
105 Revised Expect To Ship By Week Of Date
106 Required By Date
107 Deposit Date/Time
108 Postmark Date
109 Date/Time Received At Lockbox
110 Agreed Upon Scheduled Ship
116 Scheduled Interchange Delivery
214 Date of Repair/Service

Users should consider use of either X12.3 version 004000 or current DSTU (Draft Standard for Trial Use). The list above is not comprehensive, but is representative of codes employed. A full list of codes representing time is available from:

DATA INTERCHANGE STANDARDS ASSOCIATION (X12 DISA)
7600 Leesburg Pike, Suite 430,
Falls Church, VA 22043 USA
ATTN: Manager, Publications and Standards
Voice: 703.970.4480
http://www.x12.org/

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
25 West 43rd Street
New York, NY 10036
(212) 642-4900
http://webstore.ansi.org/default.aspx

(This Annex is not part of American National Standard ANSI MH10.8.2)

ANNEX F

ANSI X12.3
Data Element Numbers 208 & 209
Hazardous Material Codes

ANSI X12.3 Data Identifier Dictionary
Code List 208 and 209 Hazardous Material Codes

208 HAZARDOUS MATERIAL CODE QUALIFIER

CODE DEFINITION

4 46 Level DOT Code[1]
6 Airline Tariff 6D[2]
9 Title 49, Code of Federal Regulations (CFR)[3]
A International Civil Aviation Organization (ICAO) Code[4]
B Uniform Fire Code (UFC)[5]
C Storage Compatibility Group[6]
D Hazardous Material ID, DOT[7]
E Endorsement
F Air Force Joint Manual 24-204[8]
I Intergovernmental Maritime Organization (IMO)[9]
R Bureau of Explosives (BOE) 6000 Tariff[10]
T International Air Transport Association Dangerous Code List[11]
U United Nations[12]
X Hazardous Class or Division[13]

Users should consider use of either X12.3 version 004000 or current DSTU (Draft Standard for Trial Use). The list above is not comprehensive, but is representative of codes employed. A full list of Hazardous Material Code Qualifiers is available from:

1 Code of Federal Regulations CFR Title 46
Available from:
Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402
Abstract: Hazardous materials codes for domestic water shipments

2 Tariff 6D - Official Regulations on Restricted Articles
Available from:
Airline Tariff Publishing Co.
Dulles Airport
Washington, DC
Abstract: Hazardous materials codes for domestic air shipments

3 Hazardous Material Code (49 Level)
Available from:
Standard Transportation Commodity Code (STCC)/Hazardous Materials Shipping Description
Railinc/Association of American Railroads
7001 Weston Parkway – Suite 200
Cary, NC 27513
Abstract: The hazardous materials section (Group 49) of the STCC is organized according to the kind and degree of hazard associated with hazardous materials or hazardous substances, with special provisions to relate the identified commodity to its product class with the established commodity code structure.

4 IATA Restricted Articles Regulation
Available from:
International Air Transport Association (IATA)
Publications Department
800 Place Victoria - PO Box 113
Montreal, Quebec H4Z 1M1 Canada
Voice: +1 514 874 0202
Abstract: Hazardous materials codes for international air shipments

5 Uniform Fire Code (UFC)
Available from:
International Fire Code Institute (IFCI)
5360 Workman Mill Road
Whittier, CA 90601-2298

6 Storage Compatibility Group Designator
Code of Federal Regulations
Transportation, Title 49, Section 172
October 1, 1992, pages 328-329
Available from:
Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402
Abstract: Provides storage group designators, as established by the U.S. Department of Transportation, which specify special storage provisions for hazardous materials for the purpose of transportation in commerce.

7 Hazardous Materials ID, DOT
Code of Federal Regulations
Transportation, Title 49, parts 100 to 177
revised as of November 1, 1983, pages 75-170
Available from:
Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402
Abstract: Provides codes, names, and hazard classes for materials designated by the U.S. Department of Transportation as hazardous for purposes of transportation in commerce. The identifier of the materials listed is alphanumeric of the form: “AAdddd”. The numeric (“d”) portion of the identifier has no significance. The alphabetic prefix may be “UN” for materials appropriate for both international and domestic shipments; or “NA” for materials appropriate only for domestic shipments and shipments to and from Canada.

8 Air Force Joint Manual 24-204:
Preparing Hazardous Materials for Military Air Shipments
United States Air Force Material Command
Available from:
Defense Automated Printing Service
Bldg. 4D, 700 Robins Avenue
Philadelphia, PA 19111-5094
URL: http://www.afmc.wpafb.af.mil/Hazmat
Abstract: This manual provides guidance and procedures for preparing hazardous materials for shipment aboard military aircraft to ensure that such materials are packaged, marked, labeled, and prepared properly for transportation

9 Intergovernmental Maritime Organization (IMO)
Dangerous Goods Code
Available from:
Intergovernmental Maritime Consultative Organization (IMCO)
101-104 Piccadilly
London W1 VOAE England
Abstract: Dangerous materials codes for international ocean shipments.

10 Bureau of Explosives (BOE) 6000 Tariff
Hazardous Materials Regulations of the Department of Transportation by Air, Rail, Highway, and Water
Available from:
Association of American Railroads
Publications
P.O. Box 1265
Evans City, PA 16033
Abstract: Regulations and restrictions covering the acceptance and transportation of explosives and other dangerous articles by carriers.

11 International Air Transport Association (IATA) Dangerous Goods Code
Dangerous Goods Regulations
Available from:
International Air Transport Association (IATA)
Publications Department
800 Place Victoria - PO Box 113
Montreal, Quebec H4Z 1M1 Canada
Voice: +1 514 874 0202
Abstract: Air courier regulations for the shipping and acceptance handling of dangerous goods. Based on the International Civil Aviation Organization (ICAO) Technical Instructions for the Safe Transport of Dangerous Goods by Air.

12 United Nations Number (Dangerous Goods)
"Transportation of Dangerous Goods", Recommendations of the Committee of Experts of the Transport of Dangerous Goods, Third Revised Edition United Nations ST/SG/AC10/1REV.3, 1983, SALES NO.E.83 VIII.1
Available from:
United Nations Publications
Polaris des Nations
CH – 1211 Geneva 10 Switzerland
Abstract: Provides codes, names and hazard classes for materials designated as dangerous for purposes of transport in commerce. The identifier of the dangerous goods listed is numeric of the form “dddd”.

13 Hazardous Class or Division
Code of Federal Regulations, Transportation, Title 49,
Subchapter C, Subpart B, Table of Hazardous Materials and Special Provisions
October 1, 1992 Version, pages 120-238
Available from:
Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402
Abstract: Provides classes and divisions for Hazardous Materials as established by the U.S. Department of Transportation for the purpose of transportation in commerce.

(
(This Annex is not part of American National Standard ANSI MH10.8.2)

ANNEX G

ISO 4217
Unit of Value
Currencies and Funds

ISO 4217
Unit of Value of Currencies and Funds

DEFINITION	ALPHABETIC CODE	NUMERIC CODE
Algerian Dinar	DZD	012
Argentine Peso	ARS	032
Australian Dollar	AUD	036
Brazilian Real	BRL	986
Canadian Dollar	CAD	124
Chinese Yuan	CNY	156
Danish Krone	DKK	208
Egyptian Pound	EGP	818
European Euro	EUR	978
Hong Kong Dollar	HKD	344
Iceland Kronur	ISK	352
Indian Rupee	INR	356
International Monetary Fund (SDR)	XDR	960
Israeli Shekel	ILS	376
Japanese Yen	JPY	392
Korean (South) Won	KRW	410
Mexican Peso	MXN	484
New Zealand Dollar	NZD	554
Norwegian Krone	NOK	578
Paraguayan Guarani	PYG	600
Polish Zloty	PLN	985
Romanian Leu	RON	946
Russian Rouble	RUB	643
Saudi Riyal	SAR	682
Singapore Dollar	SGD	702
South African Rand	ZAR	710
Swedish Kronor	SEK	752
Swiss Framc	CHF	756
Syrian Pound	SYP	760
Thailand Baht	THB	764
Turkish Lira	TRY	949
United Arab Emirates Dirham	AED	784
United Kingdom Pound Sterling	GBP	826
United States Dollar	USD	840
Uruguayan Peso	UYU	858
Venezuelan Bolivares Fuertes	VEF	937
Vietnamese Dong	VND	704
Gold	XAU	959

The list above is not comprehensive, but is representative of codes employed. A full list of Codes for Representation of Currencies and Funds (ISO 4217) is available from:

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
25 West 43rd Street
New York, NY 10036
(212) 642-4900
http://webstore.ansi.org/default.aspx

(This Annex is not part of American National Standard ANSI MH10.8.2)

ANNEX H

ISO 3166-1
Country Code

ISO 3166-1
Country Code

DEFINITION	ALPHA-2 CODE	ALPHA-3 CODE	NUMERIC CODE
Non-specific Country	AA	AAA	000
Argentina	AR	ARG	032
Australia	AU	AUS	036
Austria	AT	AUT	040
Belgium	BE	BEL	056
Brazil	BR	BRA	076
Canada	CA	CAN	124
Denmark	DK	DNK	208
Finland	FI	FIN	246
France	FR	FRA	250
Germany	DE	DEU	276
Greece	GR	GRC	300
Holy See (Vatican City State)	VA	VAT	336
Iceland	IS	ISL	352
India	IN	IND	356
Ireland	IE	IRL	372
Israel	IL	ISR	376
Italy	IT	ITA	380
Japan	JP	JPN	392
Luxembourg	LU	LUX	442
Mexico	MX	MEX	484
Netherlands	NL	NLD	528
New Zealand	NZ	NZL	554
Norway	NO	NOR	578
Paraguay	PY	PRY	600
Poland	PL	POL	616
Portugal	PT	PRT	620
Romania	RO	ROM	642
Saudi Arabia	SA	SAU	682
Singapore	SG	SGP	702
South Africa	ZA	ZAF	710
Spain	ES	ESP	724
Sweden	SE	SWE	752
Switzerland	CH	CHE	756
Turkey	TR	TUR	792
United Kingdom	GB	GBR	826
United States of America	US	USA	840
Uruguay	UY	URY	858
Venezuela	VE	VEN	862

The list above is not comprehensive, but is representative of codes employed. A full list of Codes for the representation of names of countries and their subdivisions -- Part 1: Country codes (ISO 3166-1) is available from:

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
25 West 43rd Street
New York, NY 10036
(212) 642-4900
http://webstore.ansi.org/default.aspx

This Annex is not part of American National Standard ANSI MH10.8.2.)

ANNEX I

Data Identifier and Application Identifier Request Forms

Included are two request forms, one for new Data Identifiers and another for new Application Identifiers. Where the end user finds that the identifiers described in this document are insufficient, these request forms should be used as appropriate.

Rev. ANS MH10.8.2-0038 (DI)

Reference: _____
Date: _____

ANS MH10.8.2 DATA IDENTIFIER REQUEST FORM

Complete all parts. Submit to:
Craig K. Harmon, Chairman, ASC MH 10 Data Identifier Maintenance Committee
c/o Q.E.D. Systems
3963 Highlands Lane, SE, Cedar Rapids, IA 52403-2140 USA
(V): +1 319/364-0212 * (M): +1 319/533-8092 * (E): craig.harmon@qed.org * (U1): http://www.autoid.org
Incomplete forms or those with inadequate support for the change requested will be returned to the submitter. The ANS MH10.8.2 DI Maintenance Committee will notify submitters of the status of the work request following their review.

Request for: ___ New Data Identifier
___ Data Identifier Interpretation

Organization: _____

Contact Person: _____

Address: _____

_____

_____

Telephone: _____

Email Address: _____

1. **PROPOSED DATA IDENTIFIER**
Provide a short description (20 words or less) which would be included as a description for the proposed Data Identifier. For an interpretation, provide a comprehensive description of the aspect of the identifier that needs interpretation.

Page 2 (Data Identifier Request)

2. **BUSINESS CASE**

Explain why you need the proposed assignment. Provide a complete scenario that tells what the business function, operation, or problem is that will be satisfied by a new assignment to the ANS MH10.8.2 Data Identifier Standard. If the proposed DI is already in use by your organization, please identify how long this identifier has been in use and other organizations you are aware of who employ the same identifier. The ANS MH10.8.2 DI Maintenance Committee requires enough information to be able to propose an alternate solution if necessary. Be specific because this will also appear in the ANS MH10.8.2 Voting Package and will be the only information that voters have on which to base their vote.

Page 3 (Data Identifier Request)

3. **DEFINITIONS**

Definitions for new assignments and for industry-specific terms must be complete. For new ANS MH10.8.2 DI, provide a proposed assignment and a DI definition. RULES: (1) Acronyms/abbreviations cannot be added to the standards - they must be spelled out. (2) Provide an expanded assignment definition for each DI which is not completely self-explanatory, that is, terms that are not in general business use or that are industry specific. (3) Provide code source references for all externally published (non-ANS MH10.8.2) code lists cited (use the Form for New or Revised Code Source Reference). If one exists, provide a precise description of the structure of the data as foreseen by your organization for this application. Indicate data elements involved and their formal (numeric, alphanumeric, fixed or variable length, number of decimals). Indicate the business function of each data element in the application.

Page 4 (Data Identifier Request)

4. **MEDIA AND APPLICATION USE**

- With what media (e.g., bar code, 2D symbol, RF tag, etc.) do you intend to use the proposed Data Identifier?

- At what stage will the Data Identifier and data be created and applied?

- On to what and when will the media be applied (package, label, tag, document, . . .)?

- Why does the information need to be machine-readable?

- When and where is the media read?

- Describe the use of the Data Identifier by other users than the originator:

- What is the number of potential users?

5. Justification
Describe the benefits (hard and soft savings) expected from the application.

6. Additional Information
Feel free to attach any addition information related to your organization and the application.

Date: _____ Signature:_____

Data Identifier Data Dictionary Record

Data Dictionary Detailed Entry			
NAME:		**Version**	**Key**
XML Tag:			**DI:**
Definition:			
Class: Numeric/Alpha/Alphanumeric/Binary **Remarks:** **Decimals:** **Yes/** No **Min_Length:** **Max_Length:** **Case Sensitive:** Yes/No			
Business Rules:			
Data Element Source/Authority:			
APPLICATION AREAS			
Area	**Application**	**Category**	**Remarks**
USES			
Application Area	**Usage**	**Type**	**Specific Use**
ALIAS: Production Date			
[a] **Table footnote.**			

Rev. ANS MH10.8.2-4324 (AI)

Reference: _____
Date : _____

Please return to:

GS1
Attn: Technical Director
Blue Tower
Avenue Louise, 326
BE 1050 Brussels, Belgium
(V): +32 2 788 7800
(F): +32 2 788 7899
(U): http://www.gs1.org/

GS1 US
Technical Director
Princeton Pike Corporate Center
1009 Lenox Drive, Suite 202
Lawrenceville, NJ 08648
(V): +1 609 620 0200
(F): +1 609 620 1200
(U): http://www.gs1us.org

GS1 APPLICATION IDENTIFIER STANDARD

Request for: ___ New Application Identifier
___ Modification to Existing Application Identifier

Organization: _____

Contact Person: _____

Address: _____

_____

_____

Telephone: _____

Telefax: _____

1. Organization Description

Describe below, the organization issuing the request. Indicate the specific type of activities performed and their scope of application: industrial sector, national or international representation

Page 2

2. Application Description

Provide concise description of the business application for which the Application Identifier is required.

3. Data Structure

Give a precise description of the structure of the data as foreseen by your organization for this application. Indicate data elements involved and their formal (numeric, alphanumeric, fixed or variable length, number of decimals). Indicate the business function of each data element in the application.

Page 3

4. Usage of Bar Code Technology

- At what stage will the Application Identifier and data be created and applied?

- Where and when will the bar code be printed (package, label, tag, document, . . .)?

- Why does the information need to be bar cod marked and read?

- When and where is the bar code read?

- Describe the use of the Application Identifier by other users than the originator:

- What is the number of potential users?

5. Justification
Describe the benefits (hard and soft savings) expected from the application

6. Additional Information
Feel free to attach any addition information related to your organization and the application.

Date: _____ Signature:_____

(This Annex is not part of American National Standard ANSI MH10.8.2.)

ANNEX J

User Guidance

(Informative)

USER GUIDANCE (INFORMATIVE)

The choice of Application or Data Identifiers will normally be defined in the applicable industry convention being followed. Industries and companies following the GS1 system of bar codes for retail and general trade goods should use Application Identifiers. Other industries developing product or shipment identification conventions should consider business practices, information requirements, and systems capabilities of the trading partners in choosing between Data and Application Identifiers.

(This Annex is not part of American National Standard ANSI MH10.8.2.)

ANNEX K

System Identifiers

(Informative)

Annex K
System Identifiers (Informative)

General

Section I, Data Identifiers, lists a Category "0" as Special Characters Not Assigned or Control by ASC MH1 10/SC 8. These characters, in a leading position of the data structure, are sometimes referred to as system identifiers, denoting a data structure maintained by the organization claiming this system identifier.

System Identifier (See Notes)	Data Structure Usage
+	Plus sign. Health Industry Business Communications Council (HIBCC)
&	Ampersand. American Association of Blood Banks (AABB)
=	Equal sign. International Society for Blood Transfusion (ISBT)
FNC1	Function 1. Appears in the first position following the symbology start character of a Code 128, Code 49, or Code 16K Symbol to signify a GS1-controlled symbol
[)>$^{R}_{S}$	Left square bracket, right parenthesis, greater than sign, record separator character. Data structure compliant to ISO/IEC 15434, *Information technology — Automatic Identification and Data Capture Techniques — Syntax for High Capacity ADC Media*
-	Hyphen – Minus. Pharmaceutical Central Number (PZN), controlled by IFA-ABDATA, Germany
!	Exclamation mark. Eurocode-IBLS

Notes:

Certain characters, e.g. FNC 1, have no ISO/IEC 646 (ASCII) equivalent and require special processing for human-readable and universal AIDC media encoding.

Certain characters, e.g. the $^{R}_{S}$ in [)>$^{R}_{S}$, are difficult to represent in human-readable and may require mutually agreed upon dingbats for the representation in human-readable text.

Certain characters, e.g. the exclamation mark, are not universally encodable in the basic character set of all symbologies, e.g. Code 39.

Controlling authority

None of these character uses are covered or controlled by this standard, ANS MH10.8.2. Neither does this standard recommend the use of these system identifiers.

Minimum requirements for inclusion within this Annex

For a system identifier to be listed in this annex requires two basic principles:

1. The system identifier must be integral in a specification approved by the governing organization of which the system identifier refers.
2. The specification within which the system identifier is integral must have a maintained URL, permitting open ordering of the specification. Ideally, the specification would be available at no charge.

Specification availability

Specifications for the system identifier contained within this informative annex can be accessed at the following URLs.

System Identifier	Controlling Specification	URL
+	*ANS HIBC 2, Health Industry Supplier Labeler Standard*	http://www.hibcc.org
&	I*SBT 128 Standard Technical Specification*	http://www.iccbba.org
=	I*SBT 128 Standard Technical Specification*	http://www.iccbba.org
FNC1	*GS 1 General Specifications*	www.gs1.ch/Portals/3/2publish/001/1133/Page/english/GenSpec_v8_i2.pdf
[)>$^{R}_{S}$	ISO/IEC 15434, *Information technology — Automatic Identification and Data Capture Techniques — Syntax for High Capacity ADC Media*	http://www.iso.org
- (Minus sign)	*Pharmaceutical Central Number (PZN)*	Organization: http://www.ifaffm.de Document: http:www.ifaffm.de/download/Technische%20Hinweise%20PZN-Codierung.pdf (temporarily, text is available only in German)
! (Exclamation mark)	*Eurocode-IBLS*	Organization: http://www.eurocode.org Document: http://www.eurocode.org/guides/index.html

The on-line listing of the continuous maintenance version of ANS MH10.8.2, Data Application Identifiers can be found at:

http://www.autoid.org/ANSI_MH10/ansi_mh10sc8_wg2.htm

(This Annex is part of American National Standard ANSI MH10.8.2.)

ANNEX L

Identifiers for Returnable Packaging Items

(Normative)

Annex L
Data Identifiers for Returnable Packaging Items (RPIs)

L.1 General

The concepts of returnable, reusable, and recyclable are frequently used interchangeably, though conceptually they are quite different. A key underlying concept of difference is ownership, whereby returnable items maintain the original ownership, while the ownership of reusable and recyclable items is transferred between parties. Figure L.1 shows a consumer lifecycle explaining the differences.

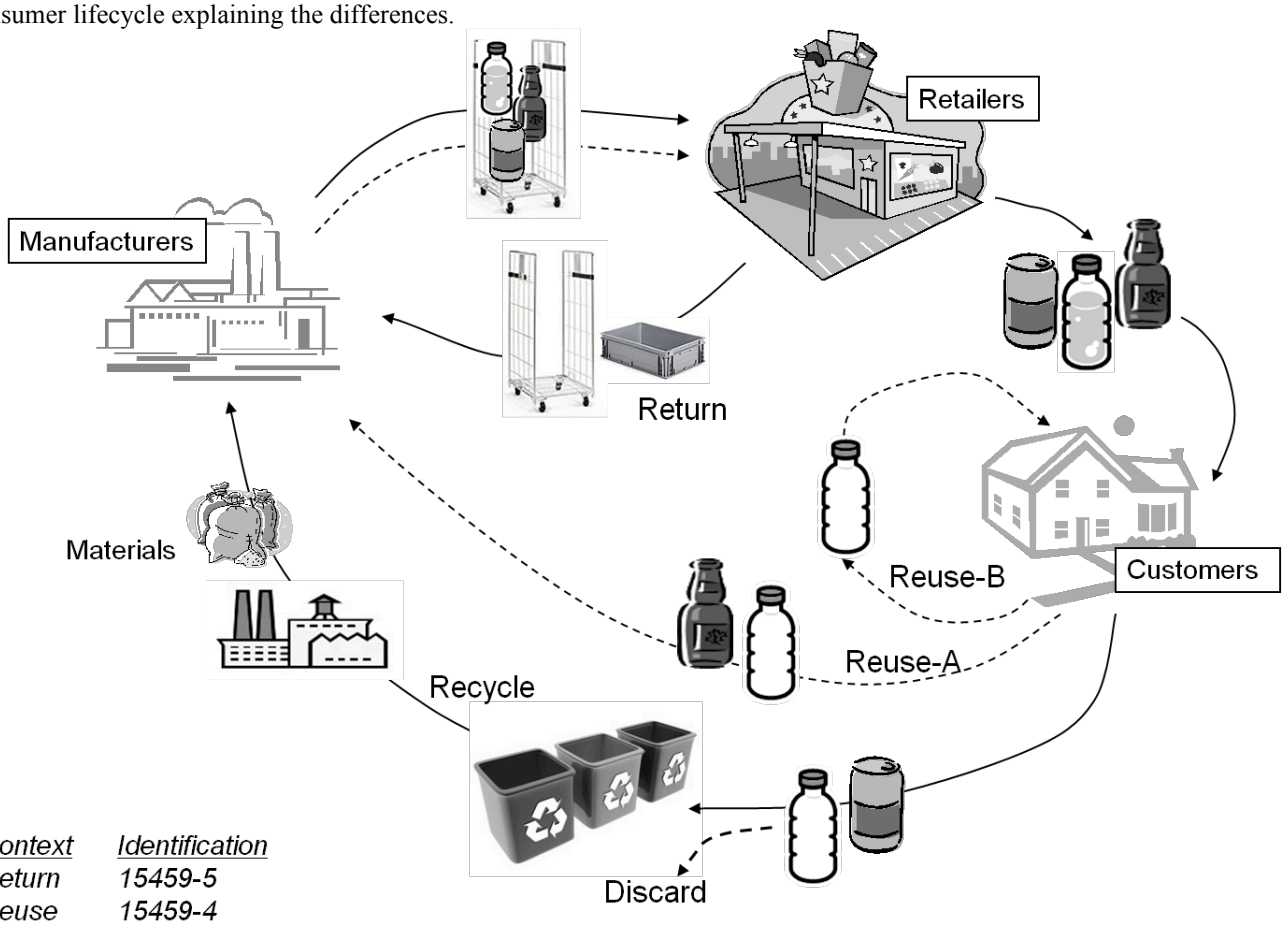

Figure L.1 – Returnable, reusable, and recyclable lifecycle

L.2 Recyclable item

With a recyclable item, the ownership of the item is transferred when the item is sold. A typical use recyclable item is a battery, which can be disposed at a recycling station and parts of the content can be recycled and used for manufacturing of new batteries.

L.2.1 Identification

ISO/IEC 15459-4 addresses unique identification for individual recyclable items (products).

L.3 Reusable item

With a reusable item the ownership of the item is transferred when the item is sold. In some jurisdictions an incentive to return the reusable packaging is provided at the time of purchase, a deposit, which can be recovered when the item is returned to the location from which the item was purchased.
A typical use recyclable item is a hard plastic bottle, which can either be reused by the user (i.e. filling the bottle with new content after cleaning it) or disposed at a recycling station and depending on whether its constituents parts can be reused (i.e. cleaned and refilled) or recycled and used for "manufacturing" of new bottles.

L.3.1 Identification

ISO/IEC 15459-4 addresses unique identification for individual reusable items (products).

L.4 Returnable items

With a returnable item the ownership of the item remains with the party providing the item, even though the item is sent to a customer. The supplier retains ownership of the asset with the anticipation that the customer will return the asset once it has served its original purpose
A typical use of a returnable item is for transportation of goods where the item can be reused in terms of that the content and carrier can change but the owner is still the same.

L.4.1 Identification

ISO/IEC 15459-5 addresses unique identification for returnable items.

L.5 Returnable Transport Items and Returnable Packaging Items

L.5.1 Overview

Some pallets and returnable boxes are equipped with shock absorbing material to protect them from potential damage occurring during in the transportation and handling process. An effective solution is the use of partitions or sorting boards for separating the contents into appropriate groups, making it possible to place many items on a single pallet or returnable box. This kind of accessory for a pallet or returnable box is defined as a "partition". The typical example of this is a post-type partition used with the post pallet. Also included in this group is packing material used to place or arrange the contents between the posts, or a packaging material for dividing the inside of the returnable box into several smaller sections.

L.5.2 Partitions

Some pallets and returnable boxes are equipped with shock absorbing material to protect them from potential damage occurring during in the transportation and handling process. An effective solution is the use of partitions or sorting boards for separating the contents into appropriate groups, making it possible to place many items on a single pallet or returnable box. This kind of accessory for a pallet or returnable box is defined as a "partition". The typical example of this is a post-type partition used with the post pallet. Also

included in this group is packing material used to place or arrange the contents between the posts, or a packaging material for dividing the inside of the returnable box into several smaller sections.

L.5.3 Posts

Figure L.2 shows a post that is normally used to securely fix packing materials or returnable box on the pallet. Most of these posts are made of high durable substances like plastic or metal.

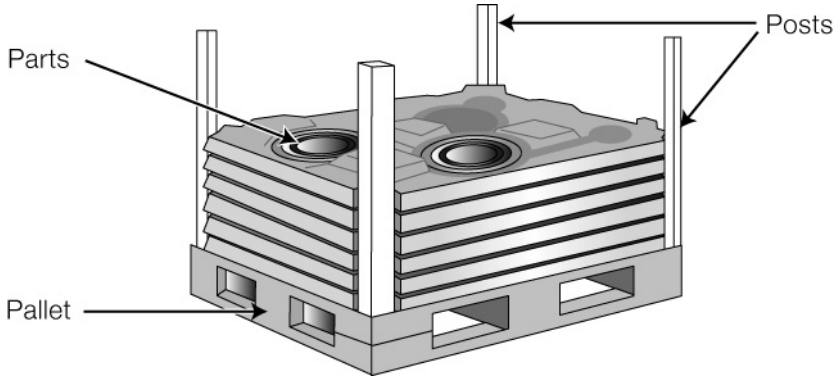

Figure L.2 – Post

L.5.4 Packing materials

Some kind of packing materials should be provided to protect the items from a shock or vibration that may be encountered during transportation, or protect them from being touched or hit by the pallet or returnable box in which they are placed. Most of the packing materials are made of high resilient flexible substances like plastic, urethane, and polystyrene foam. This guideline is applicable to these kinds of packing materials (see Figure L.3 and Figure L.4).

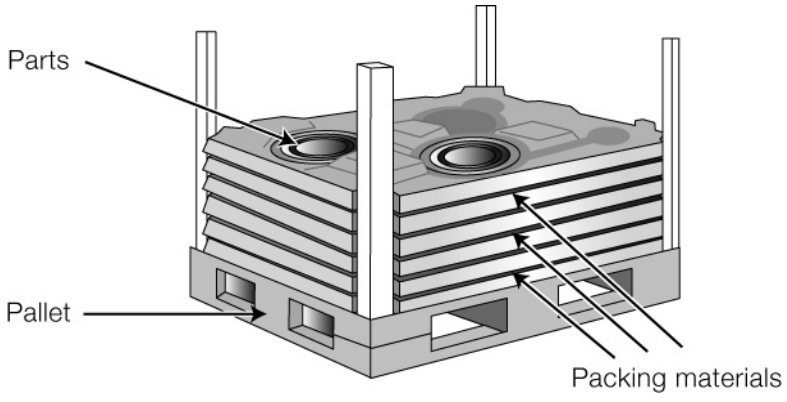

Figure L.3 – Packing material

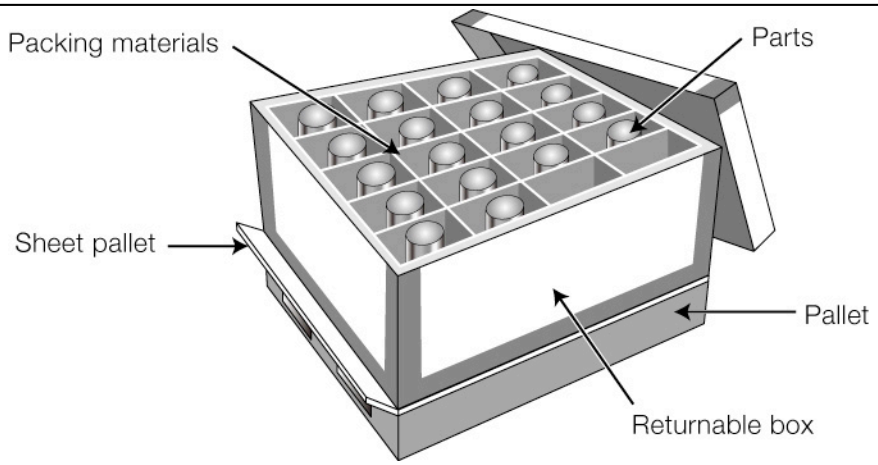

Figure L.4 – Packing material

L.5.5 Identification

In Figure L.3, the base pallet is the actual RTI and the moulded plastic layers and posts are the RPIs. If each is serialized, it may be important to associate the RPIs with the parent RTI. In this example, the RTI may have a unique identity of "25BUN0433257110000001". The four posts might have a unique identity of
"25SUN043325711P000001"
"25SUN043325711P000002"
"25SUN043325711P000003"
"25SUN043325711P000004"

. . . and the six plastic layers might have a unique identity of
"25SUN043325711L000001"
"25SUN043325711L000002"
"25SUN043325711L000003"
"25SUN043325711L000004"
"25SUN043325711L000005"
"25SUN043325711L000006"

L.5.5.1 My parent is . . .

One possibility to associate the RPIs with the parent RTI is with the use of the Data Identifier "iF" which declares, "My parent is . . . " Using this example the 3rd plastic layer would be encoded
25SUN043325711L000003<GS>1F25BUN0433257110000001.
The other layers and posts would be similarly encoded.

L.5.5.2 My children are . . .

Another possibility to associate the parent RTI with all of its RPIs is with the use of the Data Identifier "2F" which declares, "My children are . . . " Using the same example the base pallet would be encoded
25BUN0433257110000001<GS>2F25SUN043325711L000003<GS>1F25BUN0433257110000001<GS>25SUN043325711L000001<GS>25SUN043325711L000002<GS>25SUN043325711L000003<GS>25SUN043325711L000004<GS>25SUN043325711L000005<GS>25SUN043325711L000006"25SUN043325711P000001<GS>25SUN043325711P0000002<GS>25SUN043325711P000003<GS>25SUN043325711P000004

L.5.5.3 I have _____ children

Yet another possibility is to simply identify the number of RPIs associated with the parent RTI using the Data Identifier "3F" which declares, "I have ____ children". Using the same example the base pallet would be encoded
25BUN0433257110000001<GS>3F10
Likewise, any combination of the three associative DIs, might be used.