

Chapter 8

Glossary

- AF&PA — American Forest & Paper Association
- AIA — Aerospace Industry Association
- AIAG — Automotive Industry Action Group
- AIM USA — Automated Identification Manufacturers.
- ISI — American Iron and Steel Institute
- Alignment — The relative position of a scanner or light source to the target of the receiving element.
- ANSI — The American National Standards Institute is a private sector, non profit coordinator and clearing house on national and International standards.
- ANSI Standard — A document published by ANSI that has been approved through the consensual process of public announcement and review. Each of these standards have been developed by an ANSI committee and must be revisited by that committee within five years for update (see Draft Standard For Trial Use).
- Aperture — The opening of an optical system defined by a lens or baffle that establishes the field of view.
- API — American Petroleum Institute
- Application Acknowledgment — A transaction set whose purpose is to return a response to a transaction set which has been received and processed in an application program. The Purchase Order Acknowledgment Transaction Set #855 is an example of an application acknowledgment, used to respond to the Purchase Order Transaction Set #850 presenting items such as whether the receiver can fulfill the order and if it can be done on time.
- Application Control Structure — This standard describes the control segments used to envelope loops of data segments, to envelope transaction sets, and to envelope groups of related transaction sets.
- Application Identifier (AI) — Prefixes used to define the bar code data field following it.
- Application-link — A software program developed from an EDI procedure called “mapping” that extracts or enters data into the business management system.
- Area, Transaction Set — Identifies a predefined area within a transaction set (header, detail, summary) containing segments and their various attributes.
- ASC X12 — Accredited Standards Committee ASC X12 comprised of industry members for the purpose of creating EDI standards for submission to ANSI for subsequent approval and dissemination; or for submission to the UN/ECE for approval and submission of UN/EDIFACT standards.

Aspect Ratio — The ratio of bar height to symbol length.

Asynchronous Communication — An electronic communication method in which data is sent one character and one direction at a time, most commonly used in a PC environment.

ATA — American Trucking Association, Inc.

ATA — Air Transport Association of America

Authentication — A security measure involving the Data Encryption Standard which verifies that the EDI transmission and message were not tampered with or altered.

Autodiscriminate — The ability of a scanner to recognize a selectable number of different symbologies and process the data without operator intervention; this is a prerequisite feature of linear bar code scanner employed in open systems.

Autodiscrimination — The ability of bar code reading equipment to recognize and correctly decode more than one symbology.

Background — The area surrounding a printed symbol, including the spaces and quiet zones.

Bar — The darker, non-reflective element of a bar code.

Bar Code — A predetermined pattern of bars and spaces which represents numeric or alphanumeric information in machine readable form.

Bar Code Character — A single group of bars and spaces which represent an individual number, letter, punctuation mark or other symbol.

Bar Code Density — The number of characters which can be represented in a linear unit of measure. Bar code density is often expressed in characters per inch (CPI).

Bar Length — The bar dimension perpendicular to the bar width. Also called height.

Baud — (See: BPS)

Bi-directional — A bar code symbol format which permits reading in complimentary (opposite) directions across the bars and spaces.

Binary Code — A code which makes use of two distinct characters, usually 0 and 1.

Bisynchronous Communication — An electronic communication method in which data is sent in blocks of characters and in both directions simultaneously. Most commonly used by mainframes, but is also available on PCs.

•	Bit — Binary digit, the smallest component of information that is stored or transmitted by a computer.
•	BPS — The rate at which the signal changes when data is transmitted and measured in bits per second.
•	BSR — Bureau of Standards Review
•	Business Management Systems — Software programs used in a computerized or automated business environment, commonly referred to as applications or software applications.
•	CCD — Charge Coupled Device; used in scanners to sense the light and dark areas of a symbol.
•	CEC — Commission of European Communities
•	CEMA — Council for Mutual Economic Assistance
•	CEN — European Committee for Standardization
•	Centerline — The vertical axis around which character elements are located for letters, numerals, or symbols.
•	Character — 1. A single group of bars and spaces which represents an individual number, letter, punctuation mark or other symbol. 2. A graphic shape representing a letter, numeral, or symbol. 3. A letter, digit, or other symbol that is used as part of the organization, control or representation of data.
•	Check Character — A character included within a symbol whose value is used for the purpose of performing a mathematical check to ensure the accuracy of the read.
•	Checksum Character — A calculated character included within a message for error detection. Note: may also be referred to as a check digit.
•	CIDX — Chemical Industry Data Exchange
•	Communications Envelope — An enveloping function of EDI management software that identifies communication protocols, line speeds, etc., for an interchange envelope.
•	Communications Protocol — Rules or specifications allowing computers to communicate with each other.
•	Communications Software — A software program that controls computer hardware and modems and arranges for the transmission or reception of electronic data.
•	Compliance Checking — A checking process that is used to ensure that a transmission complies with ASC X12 syntax rules.
•	Composite Data Element — One or more component data elements delimited by

sub-element separators. Currently, this is used only in the EDIFACT standards.

Conditional (C) — A data element requirement designator which indicates that the presence of a specified data element is dependent on the value or presence of other data elements in the segment. The condition must be stated and must be computer machine-readable.

Continues Code — A bar code symbol where all spaces within the symbol are parts of characters, e.g., USS-I 2/5. There is no intercharacter gap in a continuous code.

Control Segment — A control segment has the same structure as a data segment but is used for transferring control information for grouping data segments. Control segments are Loop Control Segments (LS/LE), Transaction Set Control Segments (ST/SE), Functional Group Control Segments (GS/GE) and Interchange Control Segments (ISA/IEA,TA1).

Control Validation — Confirmation that information within the control segments is correct.

Critical Mass Marketing — An EDI post-interpretation program that searches for additional EDI trading partners in an effort to attain “critical mass”, or that 20% of the trading partners that typically comprises 80% of a company’s business volume.

Data Element — The basic unit of information in the EDI standards containing a set of values that represent a singular fact. They may be single character codes, literal descriptions or numeric values.

Data Element Length — The range or the number of character positions available to represent the value of a data element. A data element may be of variable length with a range from minimum to maximum; or it may be of fixed length in which the minimum is equal to the maximum.

Data Element Reference Number — Reference number assigned to each data element as a unique identifier.

Data Element Requirement Designator — A code defining the need for a data element value to appear in the segment if the segment is transmitted. Some examples of the codes are mandatory (M), optional (O), and conditional (C).

Data Element Separator — A unique character preceding each data element that is used to delimit data elements within a segment.

Data Element Type — A data element may be one of six types: numeric, decimal, identifier, string, date, or time.

Data Identifier — A specified character (or string of characters) that defines the general category or specific use of the data that follows.

Data Mapping — Relationship between the X12 message syntax and the user’s data.

- Decoder — The electronic package which receives the signals from the scanning function, performs the algorithm to interpret the signals into meaningful data, and provides the interface to other devices.
- Delimiters — The delimiters consist of two levels of separators and a terminator. The delimiters are an integral part of the transferred data stream. Delimiters are specified in the interchange header and may not be used in a data element value elsewhere in the interchange. From the highest to the lowest level, the separators and terminator are: segment terminator, data element separator, and sub-element separator (only used in EDIFACT).
- Density — The number of characters per linear inch. (CPI)
- Depth of Field — The distance between the maximum and minimum plane in which a code reader is capable of reading symbols.
- DISA — Data Interchange Standards Association. A non-profit organization funded by ASC X12 which serves as the Secretariat for ASC X12.
- Discrete Code — A bar code which contains an intercharacter gap as part of its structure. Each character is, consequently, independent of other characters in the symbol.
- Direct Transmission — The exchange of data from the computer of the sending party directly to the computer of the receiving party. A third party value added service is not used in a direct transmission.
- Draft Standard for Trial Use — Represents a document approved for publication by the full ASC X12 committee following membership consensus and subsequent resolution of negative votes (Final Report of ASC X12 Publications Task Group). The Draft EDI Standard for Trial Use document represents an ASC X12 approved standard for use prior to approval by ANSI (see ANSI Standard).
- EB — The EDIFACT Board.
- EBCDIC — Extended binary-coded-decimal interchange code.
- EC — European Community
- Edge Roughness — Edge irregularities with respect to a nominal bar edge.
- EDICA — Electronic Data Interchange Council of Australia
- EDICC — Electronic Data Interchange Council of Canada
- EDIFACT — Electronic Data Interchange for Administration, Commerce, and Transport. A recognized international EDI message standard.
- EDIFACT Board — Advisory and support team for a number of the EDIFACT Rapporteurs.
- EDI Translation — The conversion of application data to and from a standard format.

EDI Translator — Computer software used to perform the conversion of application data to and from a standard format.

EDX — Electrical Data Exchange

EFTA — European Free Trade Association (Australia, Finland, Iceland, Norway, Sweden, and Switzerland)

EIDX — Electronics Industry Data Exchange

Electronic Data Interchange (EDI) — The abbreviation for electronic data interchange, which is commonly defined as “the computer-to-computer exchange of business information in a standard format.” An EDI transmission is a highly structured message intended for automated processing by a computer. It is meant to be machine-readable so that it doesn’t require human intervention to be interpreted and understood. EDI is primarily used for intercompany communication.

Electronic Envelope — Electronic information which groups a set of transmitted documents being sent from one sender to one receiver.

Electronic Mailbox — A term used to refer to the place where an EDI transmission is stored for pickup or delivery within a third party service provider’s system. Trading partners can also maintain mailboxes within their own system.

Electronic Signature — A code or symbol that is the electronic equivalent of a written signature.

Element — A generic term used to refer to either a bar or space.

Encryption — A process of transforming cleartext (data in its original, unencrypted form) into ciphertext (encrypted output of a cryptographic algorithm) for security or privacy (see ASC X12 Cryptographic Service Message (#815)).

FASLINC — Fabric and Suppliers Linkage Council

Film Master — A photographic film representation of a specific symbol from which a printing plate is produced.

First Read Rate — The percentage of correct readings that will be obtained in one pass of the scanner over the symbol.

Fixed Beam Scanner — A stationary bar code scanner which uses a fixed (or stationary) beam of light to read bar code symbols. The symbols must be moved through the light beam to be read.

Functional Acknowledgment (997) — A transaction set transmitted by the receiver of an EDI transmission to the sender, indicating receipt and syntactical acceptability of data transmitted according to the ASC X12 standards. The functional acknowledgment allows the receiving party to report back to the sending party problems encountered by the syntax analyzer as the data is interpreted. It is not intended to serve as an acknowledgment of data content.

Functional Group — A group of one or more transaction sets bounded by a functional group header segment and a functional group trailer segment.

Functional Group Segments — GS/GE segments identify a specific functional group of documents such as purchase orders.

GCA — Graphic Communications Association

Hand Held Scanner — A scanner held and operated by human operator, thus enabling the scanner to be brought to the symbol.

Helium neon (He-Ne) laser — A type of laser commonly used in bar code scanners. It emits coherent red light at a wave length of 633nm.

Hexadecimal — Base 16 notation commonly used to represent binary values.

HIBCC — Health Industry Business Communications Council.

Impact Printing — Any printing system where a micro processor controlled hammer impacts against a ribbon and a substrate.

Industry Conventions — Define how the ASC X12 standards are used by a specific industry.

Industry Guideline — Defines the EDI environment for using conventions within an industry. It provides assistance on how to implement the ASC X12 standard.

Ink Jet — A method of printing using liquid ink projected a drop at a time against a substrate.

Integrate — The process of moving data back and forth between two different computer systems and extracting or entering that data from or to respective business management systems (software applications).

Interchange Control Segments — ISA/IEA segments identify a unique interchange being sent from one sender to one receiver (see Electronic Envelope).

Interchange Control Structure — The interchange header and trailer segments envelop one or more functional groups or interchange related control segments and perform the following functions: 1) define the data element separators and the data segment terminators, 2) identify the sender and receiver, 3) provide control information for the interchange, and 4) allow for authorization and security information.

Intercharacter Gap — The space between the last element of one character and the first element of the adjacent character of a discrete bar code symbol.

Interpretation — A function of EDI management software that translates transmitted business data from an ASC X12 format into a company's internal format for processing.

IPT — International Project Team, advisory and support team of the UN/EDIFACT Rapporteur for North America.

ISO	— International Standards Organization
Laser Scanner	— A bar code reading device that uses a low-energy laser light source for illumination.
LED	— Light emitting diode. A semiconductor that produces light at a frequency determined by its chemical composition. The light source commonly used in wand-type readers.
Light Pen, Hand-Held Scanner, Wand	— A hand-held device used as a contact bar code reader.
Line Speed	— A measurement in bits (of information) per second (bps), or baud, and relates to the speed that a modem can pass data between computers.
Loop	— A group of semantically related segments; these segments may be either bounded or unbounded. The N1 loop, which includes segments N1 to PER for name and address information, is an example of a loop.
Mailbox	— Part of an EDI Value Added Network service for a specific customer to hold that customer's message / transaction sets until retrieved.
Mandatory (M)	— A data element / segment requirement designator which indicates the presence of a specified data element is required.
Mapping	— The process of identifying the standard data elements' relationship to application data elements.
Margin	— An area before the start character and after the stop character which is devoid of printed material. (Note: may also be referred to as quiet zones.)
Max Use	— Specifies the maximum number of times a segment can be used at the location in a transaction set.
MDCC	— Mobile Data Capture and Communications
Message	— The string of data characters encoded in a bar code symbol, excluding the checksum character.
Message Length	— The number of data characters contained in a single encoded message.
Message Standards	— Rules by which business data traditionally found in paper documents is translated into a computer readable format for electronic transmission to a trading partner's computer for processing (see ASC X12 standard).
Modem	— A hardware device that converts digital (computer) data into audio (analog) tones for transmission over a telephone network. The process is reversed when receiving data. Acronym for MODulator / DEModulator.
Module	— The narrowest element (bar or space) in a bar code.

- Module Check Digit or Character — A character within the symbol data field calculated using modular arithmetic, which is used for error detection. The calculated character is determined by applying a code algorithm to the data field contents.
- Module Resolution — The width of the modules, or narrowest elements, of a bar code system.
- Moving Beam Scanner — A scanning device where scanning motion is achieved by mechanically moving the scanner in order to scan and decode a bar code symbol.
- NACHA — National Automated Clearing House Association
- NAGASA — The North American Graphic Arts Suppliers Association is the world's largest trade association representing firms in the graphic communications distribution channel who sell equipment, supplies, systems, software, and service.
- NBFA — National Business Forms Association is an international, non-profit trade association representing the independent segment of the business forms industry. Founded In 1946, it represents member companies that design and sell (distributors), manufacture and supply the business forms and related printed products industry. These companies are located throughout the United States, its territories, Canada, and over twenty other countries.
- Non-read — The absence of data at the scanner output after an attempted scan due to no code, defective code, scanner failure, or operator error.
- NPTA — National Paper Trade Association
- OCR — Optical Character Recognition.
- Optional (0) — A data element/segment requirement designator which indicates the presence of a specified data element/segment is at the option of the sending party, which can be based on the mutual agreement of the interchange parties.
- Orientation — The alignment of the symbol's scan path. Two possible orientations are horizontal with vertical bars and spaces (picket fence) and vertical with horizontal bars and spaces (ladder).
- Pen Scanner — A pen-like device either connected by wire to a device, or self-contained, used to read bar codes. Requires direct contact with the symbol.
- Picket Fence Code, Horizontal Bar Code — A bar code or symbol printed horizontally with the individual bars looking like a picket fence.
- PIDX — Petroleum Industry Data Exchange
- Pitch — Rotation of a bar code symbol about an axis parallel to the direction of the bars.

Print Contrast Signal — A mathematical expression of the relationship between the reflectivity of the bars (Rb) and the spaces (Rw).

$$PCS = \frac{Rw - Rb}{Rw} \times 100\%$$

Print Quality — The measure of compliance of a bar code symbol to the requirements of the dimensional tolerance, edge roughness, spots, voids, reflectance, PCS, quiet zone, and encodation.

Project Manager — An individual, usually a functional manager, assigned to organize the activities of the project team and to plan and implement the EDI project.

Project Team — A group of individuals responsible for gathering business information and performing implementation tasks as assigned by the project manager.

Proprietary Format — A data format specific to a company, industry, or other limited group. Proprietary formats do not comply with the ASC X12 series of standards.

Protocol — A set of rules governing information flow in an electronic communication system.

Qualifier — A data element which identifies or defines a related element, set of elements, or a segment. The qualifier contains a code taken from a list of approved codes.

Quick Response — The ability of a supplier to deliver both the product and the information about the product to a desired location within a time frame as designated by the buyer.

Quiet Zone — A clear space, containing no dark marks, which precedes the start character of a symbol and follows the stop character.

Radio Frequency — Non-optical automatic identification devices that use radio waves to transmit data.

Rapporteur — An individual expert appointed by the United Nations for specific objectives.

Reflectivity — The amount of incident light which is reflected back to the scanner's detector, expressed as a percentage of the total incident light.

Relational Conditions (X) — Relational conditions may exist between two or more data elements within a segment based on the presence or absence of one of those data elements (presence means a data element must not be empty). Relational conditions are specified by a condition code and the identity of the subject elements. Within a segment, the existence of a relational condition is indicated by the designator "X" in the attributes column.

Release — A title given to annual updates of the ASC X12 standard by the Data Interchange Standards Association (DISA) (see Version /Release).

Repeating Segment — A segment that may be used more than once at a given location in a transaction set (see Max Use).

Resolution — The minimum element width that can be accurately scanned by a scanner consisting of an optical system and digitizing circuit. (Note: the module resolution of the symbol is sometimes referred to as the symbol's resolution, thus adding a second possible meaning for this term.)

SAFLINC — Sundries and Apparel Friendship Linkage Council

Scanner — An electronic device that optically converts optical information into electrical signals.

Security — System screening which denies access to unauthorized users and protects data from unauthorized uses.

Segment — Segments consist of logically related data elements in a defined sequence. A data segment consists of a segment identifier, one or more data elements each preceded by an element separator, and ending with a segment terminator.

Segment Directory — Provides the purposes and formats of the segments used in the construction of transaction sets. The directory lists each segment by name, purpose, identifier, the contained data elements in the specified order, and the requirement designator for each data element.

Segment Identifier — A unique identifier for a segment composed of a combination of two or three uppercase letters and digits. The segment identifier occupies the first character positions of the segment. The segment identifier is not a data element.

Segment Terminator — A unique character appearing at the end of a segment to indicate the termination of the segment.

Self Checking — A bar code or symbol using a checking algorithm which can be independently applied to each character to guard against undetected errors.

Semantic Note Designator (Z) — A data element within a segment may have a designator ("Z") that indicates the existence of a semantic note. Such a note provides important additional information about the intended meaning of the data element in the context of its use within the segment. The note may also define a relationship among data elements based on the presence of one or more values in one of the data elements. Semantic notes are considered part of the standard. If a condition designator and a semantic note both affect a single data element, the condition will appear first, separated from the semantic note designator by a vertical bar (|).

SISAC — Serial Industry Systems Advisory Committee.

Software Application — (See Business Management System)

Space — The lighter element of a bar code usually formed by the background between bars.

Space width — The thickness of a space measured from the edge closest to the symbol start character to the trailing edge of the same space.

Spectral reflection — The mirror-like reflection of light from a surface.

Spectral response — The variation of sensitivity of a reading device to light of different wavelengths.

Specular — A term describing a surface with mirror-like reflecting properties.

Stacked Codes — 16K and Code 49 are examples where a long symbol is broken into sections and “stacked” one upon another similar to sentences in a paragraph. Extremely compact codes.

Standards — (See Message Standards and ASC X12 Standards)

Start-Stop Character — A special bar code character that provides the scanner with start and stop reading instructions as well as scanning direction. The start character is normally at the left-hand end of a horizontally oriented symbol. The stop character is normally at the right-hand end of a horizontally oriented symbol.

Steering Committee — An element of the project team composed of top management executives. Responsibilities include providing overall direction and resources to the EDI project, with specific focus on incorporating the EDI Strategic Plan into the goals of the company’s business plan.

Strategic Plan — A top management tool that incorporates EDI to enhance the goals of the business plan and provides an organized approach to an EDI implementation.

Substrate — The surface on which a bar code symbol is printed.

Symbol — A combination of characters including start/stop characters, quiet zones, data characters, and check characters required by a particular symbology, which form a complete, scannable entity.

Symbol length — The distance between the outside edges of the quiet zone.

Syntax — The grammar or rules which define the structure of the EDI standards (i.e., the use of loops, qualifier, etc). Syntax rules are published in ASC X12.

TALC — Textile / Apparel Linkage Council

TAMCS — Textile / Apparel Manufacturing Communications Standards

TCIF — Telecommunications Industry Forum

TEDIS — Trade Electronic Data Interchange Systems, a program for the CEC.

Thermal — A printing system where dots are selectively heated and cooled on heat sensitive paper. The paper turns dark in the heated areas.

Thermal Transfer — A printing system like thermal except a one-time ribbon is used and common paper is used as a substrate. Eliminates the problems of fading or changing color inherent in thermal.

Third Party Network — (See VAN)

Trading Partner — The sending and /or receiving party involved in the exchange of electronic data interchange transmissions.

Transaction Set — The transaction set unambiguously defines, in the standard syntax, information of business or strategic significance and consists of a transaction set header segment, one or more data segments in a specified order, and a transaction set trailer segment.

Transaction Set ID — An identifier that uniquely identifies the transaction set. This identifier is the first data element of the transaction set header segment.

Translation — The act of accepting documents in ASC X12 standard format and translating them to application readable formats and vice versa.

Transmission — Data that is sent electronically from one trading partner to another trading partner, or from one trading partner to a Value Added Network.

Transmission Control Standards — A defined format for the address information required for trading partners to exchange business data contained in transaction sets, commonly referred to as the EDI envelope.

UCC — Uniform Code Council

UCS — Uniform Communication Standard

UIO — Utilities Industry Group

UISG — Utilities Industry Standards Group

UN/ECE — United Nations/Economic Commission for Europe

VAN — Value Added Network: Third party service organizations.

Verifier — A device that makes measurements of the bars, spaces, quiet zones and optical characteristics of a symbol to determine if the symbol meets the requirements of a specification or standard.

Version Release — Identifies the publication of the standard being used for the generation or the interpretation of data in the ASC X12 standard format. May be found in the Functional Group Header Segment (GS) and in the Interchange Control Header Segment (ISA) (see Control Segment).

Vertical Bar Code — A bar code pattern presented in such orientation that the symbol from start to stop is perpendicular to the horizon. The individual bars are in an array appearing as rungs of a ladder.

VICS EDI Committee — Voluntary Interindustry Communications Standards for Electronic Data Interchange.

Wand Scanner — A hand-held scanning device used as a contact bar code or OCR reader.

Wedge — A device that plugs in between a keyboard and a terminal. It allows data to be entered either by keyboard or by various types of scanners.

WINS — Warehouse Industry National Standards guidelines

WP4 — United Nations Trade Working Party 4 on Facilitation of International Trade Procedures. Responsible among others, for various initiatives on EDI.

“X” Dimension — The dimension of the narrowest bar and narrowest space in a bar code.

X12 — The ANSI committee responsible for the development and maintenance of standards for Electronic Data Interchange (EDI).

X12.5 — Interchange Control Structure. This standard provides the interchange envelope of a header and trailer for the electronic interchange through a data transmission, and it provides a structure to acknowledge the receipt and processing of this envelope. Separate segments and data elements not in X12.22 or X12.3.

X12.6 — Application Control Structure. This standard describes the control segments used to envelop loops of data segments, to envelop transaction sets, and to envelop groups of related transaction sets.