TABLE OF CONTENTS

SECTION I — INTRODUCTION

Electronic Data Interchange (EDI) is the inter-organizational exchange of business documents in a pre-defined structured format. It is accomplished by the computer-to-computer exchange of standard formatted business transactions between one or more business partners, known as trading partners. EDI permits trading partners to generate, receive, and process data with little or no human intervention.

EDI is an important component of continuing initiatives within the Office of Community Planning and Development (CPD) for the Department of Housing and Urban Development (HUD) to improve the effectiveness and efficiency of government programs through the use of electronic information systems technology.

The EDI projects are conducted under the direction of HUD's Office of Information Technology (IT). The Office of Information Technology is responsible for providing policy direction and coordination for HUD's EDI effort.

The purpose of this Implementation Guide is to provide the information necessary to exchange business documents electronically with HUD.

How to Use This Guide

This Implementation Guide provides an overview of EDI, including definitions and standards; hardware, software, and communications requirements; and a step-by-step approach to implementing EDI technology. It is designed to introduce HUD trading partners to EDI, how EDI works at HUD, and the elements needed to successfully implement EDI in transacting business with HUD. Sections I to V cover the general concepts and elements of EDI. Sections VI and VII focus on specific EDI transaction sets used to electronically exchange business documents and the tools helpful to implement each. The following tools are provided with Section VI, VII and Appendices to aid in understanding and implementing EDI transaction set(s) in lieu of current business transactions with HUD:

- Transaction Set Outline;
- Transmission Notes;
- Data Mapping Guide;
- Cross Reference Matrix (where applicable); and
- Adjunct Transaction Sets for your particular transaction set.

How This Guide Is Organized

This Guide is divided into seven sections plus appendices, designed to answer a wide range of questions involving the business and operational considerations, and the technical requirements for implementing EDI within HUD.

Section I provides an introduction to EDI definitions and concepts, including the benefits of EDI, standards, and functional requirements.

Section II discusses the specifics of EDI use at HUD, including HUD's strategic plan for EDI implementation and the impact of EDI on HUD business processes.

Section III provides an introduction to the electronic form of HUD business documents (transaction sets) and the components of a transaction set.

Section IV specifies the technical requirements for implementing EDI, including hardware, software, and telecommunications specifications.

Section V provides the operational, procedural, and management details for implementing EDI in your organization, including Trading Partner Agreements and Addendums, as well as the implementation time schedule.

Section VI provides specific information on the mapping guides and business scenarios for the reporting of program data in an electronic format.

Appendix A contains HUD's address for the Internet.

Appendix B contains the Trading Partner Agreement with the addendum for trading with the Office of Community Planning and Development.

Appendix C contains the specifications for the HUD communications envelope.

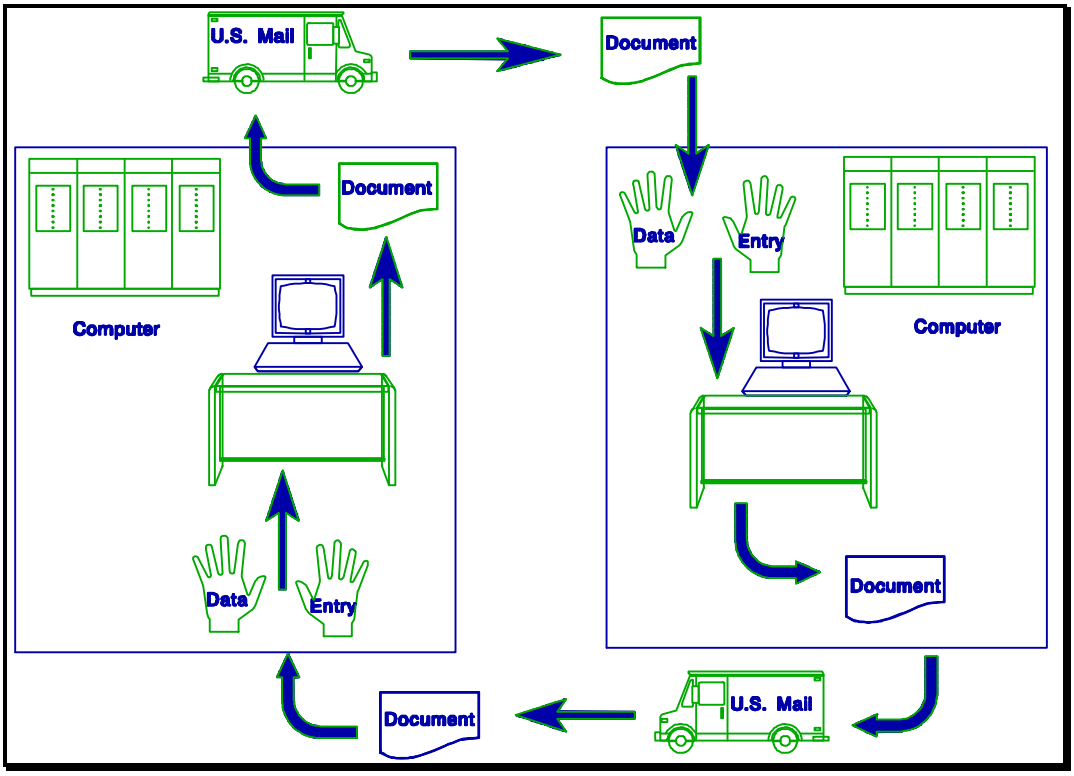
Appendix D contains the adjunct transaction sets that apply to all transaction sets used by CPD.

References and Glossary sections are also provided. The References section lists standards and other documents used in conjunction with EDI while the Glossary defines terms related to EDI.

Electronic Data Interchange

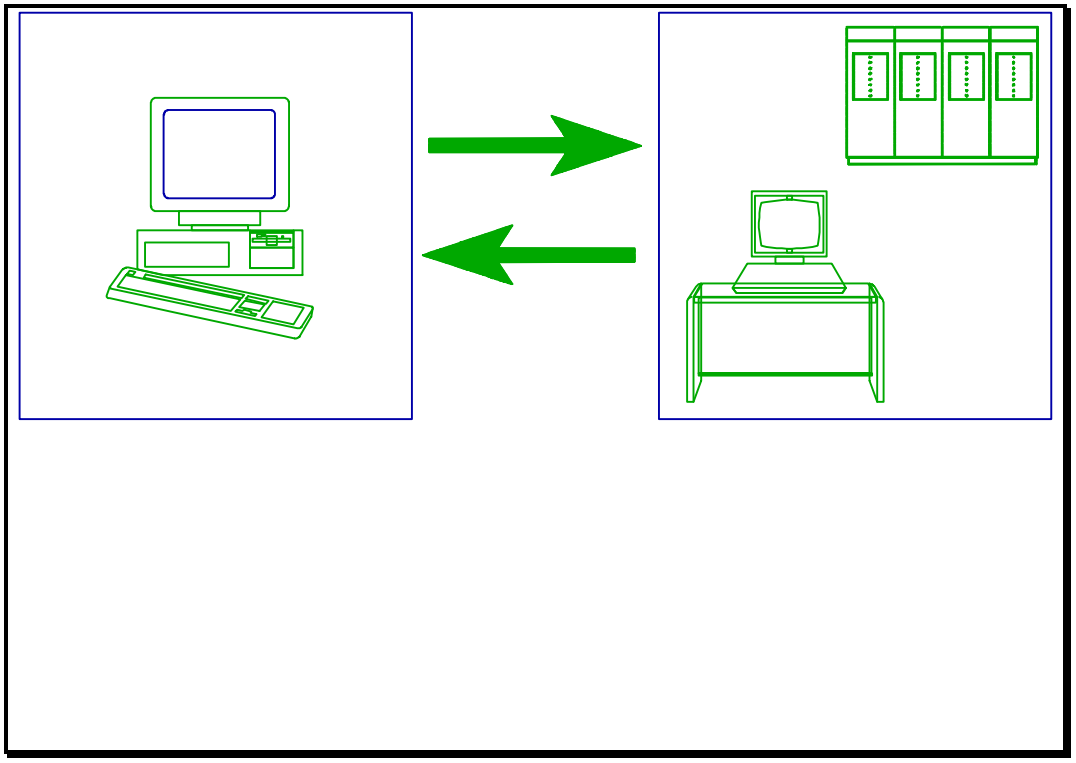
EDI is the direct computer-to-computer exchange of standard formatted business transactions between one or more mutually agreeable business partners. With EDI, standard business documents that were previously sent on paper through the mail can be transmitted instantaneously using telecommunication capabilities. Because transmissions are sent in a standardized, computer-readable format, the time-consuming and error-prone re-keying of information into the receiver's computer system is unnecessary — the document goes directly from one information system to another. EDI is "paperless trading."

Figure I-1
Without EDI



EDI includes the direct transmission of data between organizations (both sending and receiving) using an intermediary such as a value added communication network. EDI is *not* facsimile transmission of information *nor* is it electronic mail. Both of these transmission types are in free format (not standard format) and, therefore, generally require re-keying of data into a computer system.

Figure I-2
With EDI



The benefits of EDI include:

- Time savings and associated financial savings accrued from:
  - Reduced document processing and transmittal costs;
  - Elimination of keying of redundant information;
  - Reduction of manual reconciliation of information;
  - Correction of data entry errors;
  - Sorting, distribution, and filing of documents; and
  - Document mailing or telephoning of information;
- Improved accuracy;
- Improved trading partner relationships and client interactions; and
- Improved reconciliation of transactions exchanged.

Definitions

To understand EDI, it is important to have a brief introduction to a variety of terms and acronyms that are used in any discussion of EDI.

Trading Partner — A trading partner is any company, government department, or commercial or noncommercial entity with whom an organization regularly exchanges documents of formatted data (not just letters or memos).

Trading Partner Agreement — This document outlines all the conditions that will allow electronic communication between trading partners. The agreement states that the parties intend to operate in the same manner as though they were exchanging hardcopy paper documents, with the signature on the agreement serving as a substitute for signature of each paper-based business document previously submitted.

Mapping — The process of taking data from a company-specific format and fitting it to the EDI standard format (transaction set).

Transaction Set — A standard format EDI business document.

Translation Software — Software used to take data from a flat file and into a standard EDI format.

Value Added Network (VAN) — A third party network performing services beyond the transmission of data. For example, VANs provide mailbox, data security, and data archiving services.

Van Interconnect — The connection between two third party networks that allows messages from one to be communicated to the other.

The glossary provided as a part of this guide contains a more comprehensive list of EDI terms and relevant acronyms.

Standards

EDI standards are agreements between users of EDI on how data is to be formatted and communicated. Standards are key to both the effectiveness and integrity of EDI. These standards are embodied in the electronic format of business documents known as transaction sets. The standards used by HUD are the ANSI ASC X12 standards, abbreviated herein as X12.

Standards provide a common syntax, set of rules, and procedures for their maintenance and enhancements. EDI standards presently define and support more than 200 business documents derived from industry and government working groups. They provide a framework from which new standards can be derived as well as a data base of elements to be used in the creation of new standards.

In general, EDI formatting standards address the following issues:

- What documents can be communicated electronically;
- What information is to be included;
- What sequence the information should follow;
- What form the information (i.e., numeric, ID codes, etc.) should use; and
- The meaning of the individual pieces of information.

To meet the emerging requirements for standard EDI protocols, the American National Standards Institute (ANSI) chartered Accredited Standards Committee (ASC) X12 to develop uniform standards for EDI. The X12 data structure is based on a proven methodology for adapting business forms for electronic transmission across telecommunication networks. A group of standards subcommittees are in place to advise, critique, and monitor the development of all X12 formats and make these formats available for business or government use.
The Data Interchange Standards Association (DISA) was formed in 1986 to encourage the use of X12 standards. This organization is the administrative secretariat for the X12 organization. It provides services such as printing, distribution, and storage of standards. Additionally, DISA participates in the international development of standards working with EDI for Administration, Commerce, and Trade (EDIFACT). EDIFACT is a family of standards sponsored by the United Nations. These standards are emerging as the medium for global electronic trade.

For the Federal Government, the National Institute of Standards and Technology (NIST), issued Federal Information Processing Standard (FIPS) 161, Electronic Data Interchange (EDI). FIPS 161 adopts the ASC X12 standards as mandatory for use by the Federal Government for any EDI initiative implemented after September 30, 1991. In compliance with this Federal standard, HUD is committed to using X12 standards in all Department initiatives involving EDI.

SECTION II — EDI AT HUD

The U.S. Department of Housing and Urban Development (HUD) is committed to implementing direct computer application-to-computer application exchange of standardized information between private industry and HUD. EDI is widely recognized as a strategic information systems technology in both the private sector and within the Federal Government.

The HUD Office of Information Technology (IT) has selected the processing of Program Data as its first EDI opportunity. The use of EDI will reduce excessive, time consuming, paper processing by both the Grantee (HUD Recipient) and HUD Headquarters staff; thereby improving service to the community while increasing accuracy and allowing for more timely reporting.

This section of the guide provides the strategic initiatives under which EDI applications have been developed and the business process they support.

Strategic Plan

Wherever possible and feasible, HUD is committed to the use of EDI in all program and administrative initiatives that require high volume, paper-based, frequently recurring submissions to the Department from private and/or public sector sources.

The HUD EDI Strategic Plan sets forth the following objectives to be achieved for the implementation of EDI capabilities within the Office of Community Planning and Development:

- Explore the feasibility of applying EDI to the business practices of the Department;
- Create a formalized process that will facilitate central administration of EDI usage within HUD;
- Establish liaison within and external to the Federal Government to maintain currency in the use and advances of EDI technology; and
- Become an active participant within the national EDI standards committees to promote the interests of HUD programs.

EDI can be viewed as an enabling technology to be assimilated normally into the HUD business environment. It should be viewed as an enterprise capability that facilitates electronic communications (connectivity) between HUD and those clients who routinely file reports and/or submit prescribed, formatted requests for HUD program services.

EDI is not just a technical solution to automate an otherwise manual or semi-automated business process. It is an opportunity to rethink the way business is conducted with an attempt to promote productivity improvements.

Business Process Overview

The need to eliminate or reduce paperwork with an emphasis toward increasing the productivity of the Federal Government has never been greater. The impetus, first sparked by enactment of the Paperwork Reduction Act of 1980, is being realized through the use of innovative technologies such as EDI. The potential uses of EDI within HUD are likewise substantial.

EDI can be of significant benefit both to HUD and to any faction of the housing industry upon which HUD has imposed a repetitive, volume-intensive reporting requirement. Conversely, substantial benefits may also be derived by both HUD and private industry where HUD supplies a service, such as in satisfaction of mortgage insurance claims.

Technical Environment

This subsection of the guide describes the features of the HUD-specific solution for EDI implementation. It is provided as information only and does not prescribe the components of the trading partner solution.

The technical environment employed at HUD includes:

- A gateway or front-end processor; and
- The communication capabilities of a value added network (VAN).

Gateway

All CPD EDI solutions call for a gateway. The gateway consists of both hardware and software configured to interact with both the HUD systems and the HUD communications network.
The gateway system serves multiple roles in the EDI solution. It serves as another level of security protecting the host system from outside calls and relieves the host system of the burden of performing data conversion routines. Within the EDI network, the gateway system functions as the X12 communicator by performing X12 compliance checks and issuing functional acknowledgments to trading partner systems.

The HUD gateway consists of a front-end processor (FEP) and mapping and translation software. The FEP is a UNISYS SMP5400, used as a front-end to the HUD data center mainframes and supported by HUD Integrated Information Processing System (HIIPS) architecture.

The UNISYS processor is configured with a UNIX operating system, EDIplus data mapping software, and Telink OSA translation software. These software applications are used to process X12 transaction sets, interfacing them to appropriate HUD application systems.

Communications

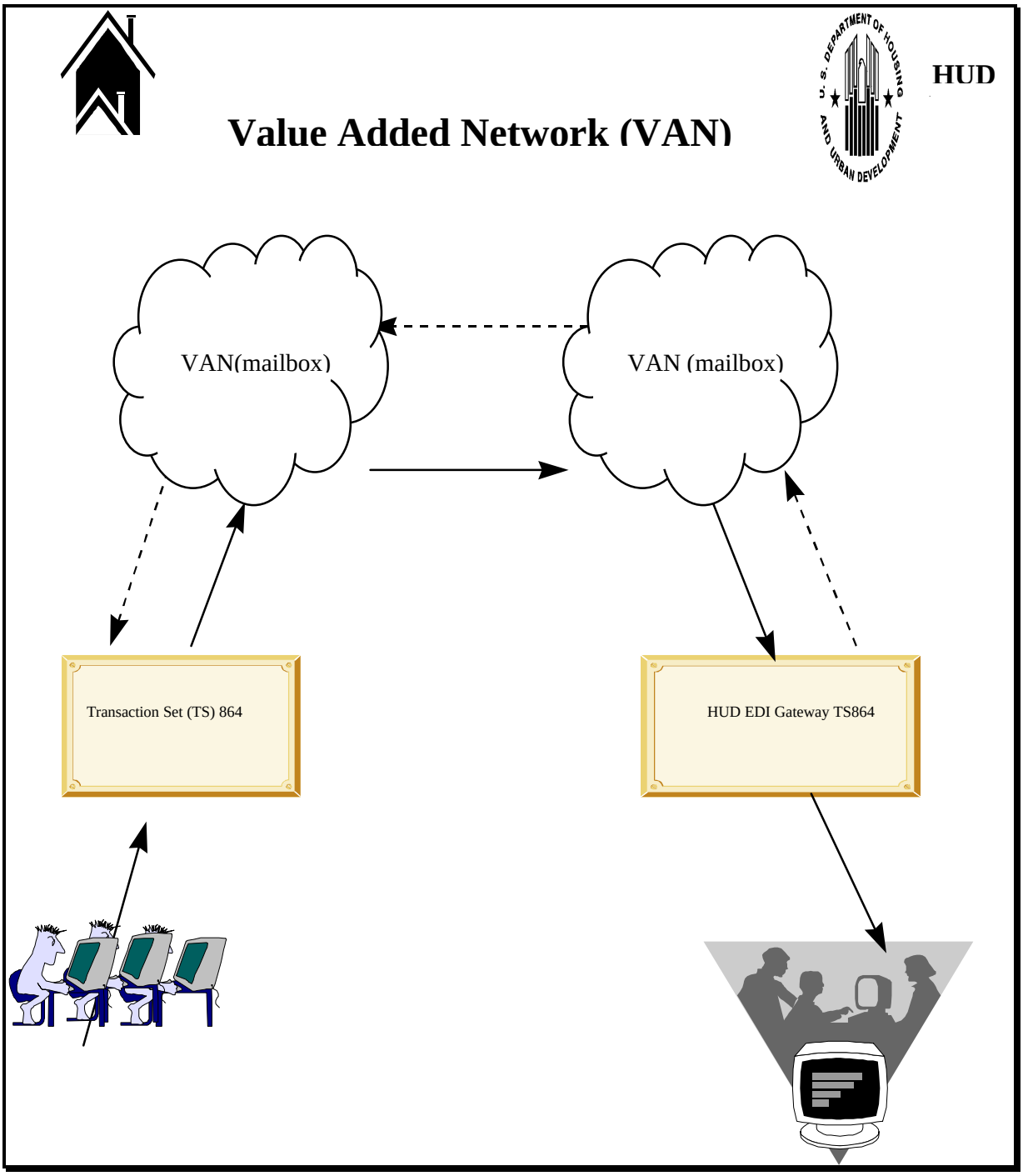
The communications network support consists of a public data network or value added network (VAN). The VAN serves as a store and forward data collection hub. Trading partners send HUD-related business data to the VAN where a compliance and validity check occurs. The data is then stored in a VAN mailbox awaiting delivery to HUD's EDI gateway system. The EDI gateway system then extracts the data from the VAN mailbox and converts the data file to a compatible application input file format.

SPRINTEDI provides the VAN services for HUD's EDI projects. Services include VAN mailboxes, network checks, standards compliance checks, and trading partners verification.

Figure II-1 provides a graphic display of the EDI access to HUD applications.

Figure II-1

EDI Access



SECTION III — TRANSACTION SETS

Transaction sets are the EDI equivalent of a document. The Accredited Standards Committee (ASC) X12 defines format, content, and nomenclature standards for transaction sets. This section of the Implementation Guide provides a basic overview of transaction sets with definitions and guidelines for CPD specific use of these predetermined transaction sets to deliver information to HUD.

Introduction to Transaction Sets

In basic terms, a transaction set consists of information of a business or strategic significance arranged in a standard syntax. A transaction set is the electronic equivalent of a specific business document and each transaction set is given a three-digit numeric code which corresponds to a universal paper form control number. For example, X12 transaction set 864 is the general electronic equivalent of a text document and is used specifically for the CPD environment to update and report programmatic data to HUD. This transaction set does not replace any forms currently used by HUD.

Composition of a Transaction Set

The data included in a transaction set can convey the same information as a conventional printed document, but is usually a subset. Within each transaction set are three general areas that relate directly to the format of the printed document. These are:

- *Header area* — contains preliminary information that pertains to the entire document, such as the date, organization's name, and address. It identifies the sending and receiving parties and transmission instructions. The header area is shown as Table 1 in mapping guides used throughout this document.

- *Detail area* — contains the actual business transaction and includes information such as quantity and descriptions of individual items. The detail area is Table 2.

- *Summary area* — contains control information and other data that relates to the entire transaction. Not all transaction sets contain a summary area. The summary area is Table 3.

The X12 EDI standards precisely define how information is to be reported with regard to format and structure. This information is displayed in electronic format in terms of transaction sets, data segments, and data elements. Standard guidelines are composed of:

- Transaction Set Description;
- Data Segment Directory; and
- Data Element Dictionary.

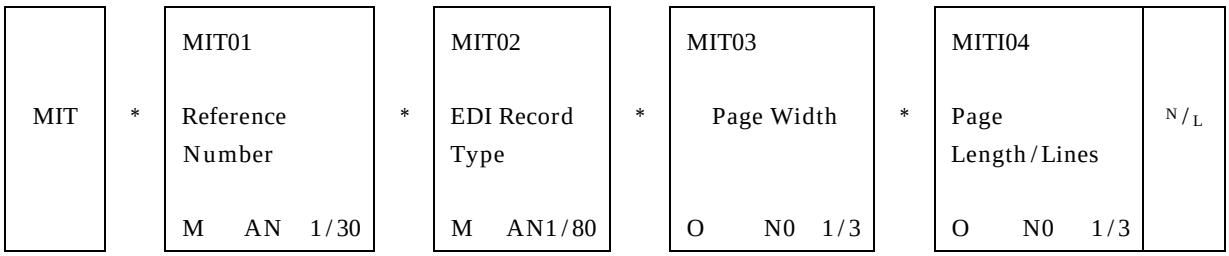
Data Segments

Each portion of the header, detail, and summary areas of the transaction set are composed of one or more data segments. A data segment is a line of information in an EDI message. A data segment consists of logically related elements in a defined sequence. Each segment is composed of one or more data elements. A data element *equals* a single piece of information and is the smallest unit of a transaction set.

A data segment is described through the use of a segment diagram structure. The basic components of the diagram are:

- Data Segment Identifier — indicates which segment is being described.
- Separator — a character that precedes each element and acts as a position marker (*).
- Terminator — a new line character ($^{N}/_{L}$). Either the [*Return*] or [*Enter*] key is used.
- Element diagrams — boxes that describe each element.

An example of a CPD specific segment diagram used with transaction set 864 is as follows:



Although at first glance the diagram looks confusing, it is actually very straightforward and provides all of the information needed to translate information to a structured EDI format.

MIT — Message Identification. This is the data segment identifier.

***** — This is the character separator. It functions to separate data elements.

$^{N}/_{L}$ — New line character signifying the end of the data segment.

The boxes between the separators are element diagrams and are described in detail in the next subsection (Data Elements).

Data segments or groups of data segments can be repeated in *loops*. A loop is a group of semantically related data segments. Loops must have an identifier and maximum

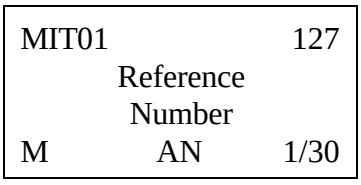
occurrences. Loops can be optional or mandatory. There are also *nested* loops; i.e., a loop within a loop.

The Segment Directory provides a detailed description and format for each segment used in a transaction set.

Data Elements

Data elements are the smallest unit of information contained in a transaction set. Data elements translate to data fields and represent a qualifier, value, or text. As such, data elements contain information like quantity and cost. Data elements possess two attributes — length and type. Data elements are defined and maintained in the Data Dictionary. Each element is identified by a number that is referenced in the Data Dictionary. Within segments, data elements are also assigned a requirement designation.

The data element diagram defines the content of each data element.



The meaning of the components of the data element diagram are as follows:

MIT01 — The segment identifier with a two-digit sequence number indicates that this is the first data element of segment MIT (Message Identification).

127 — The data element reference number.

Reference Number — The name of the data element.

M — Indicates that the data element is mandatory. Data elements can be **M** for mandatory, **O** for optional, or **X** for conditional.

AN — Indicates the data element type. Data can be:

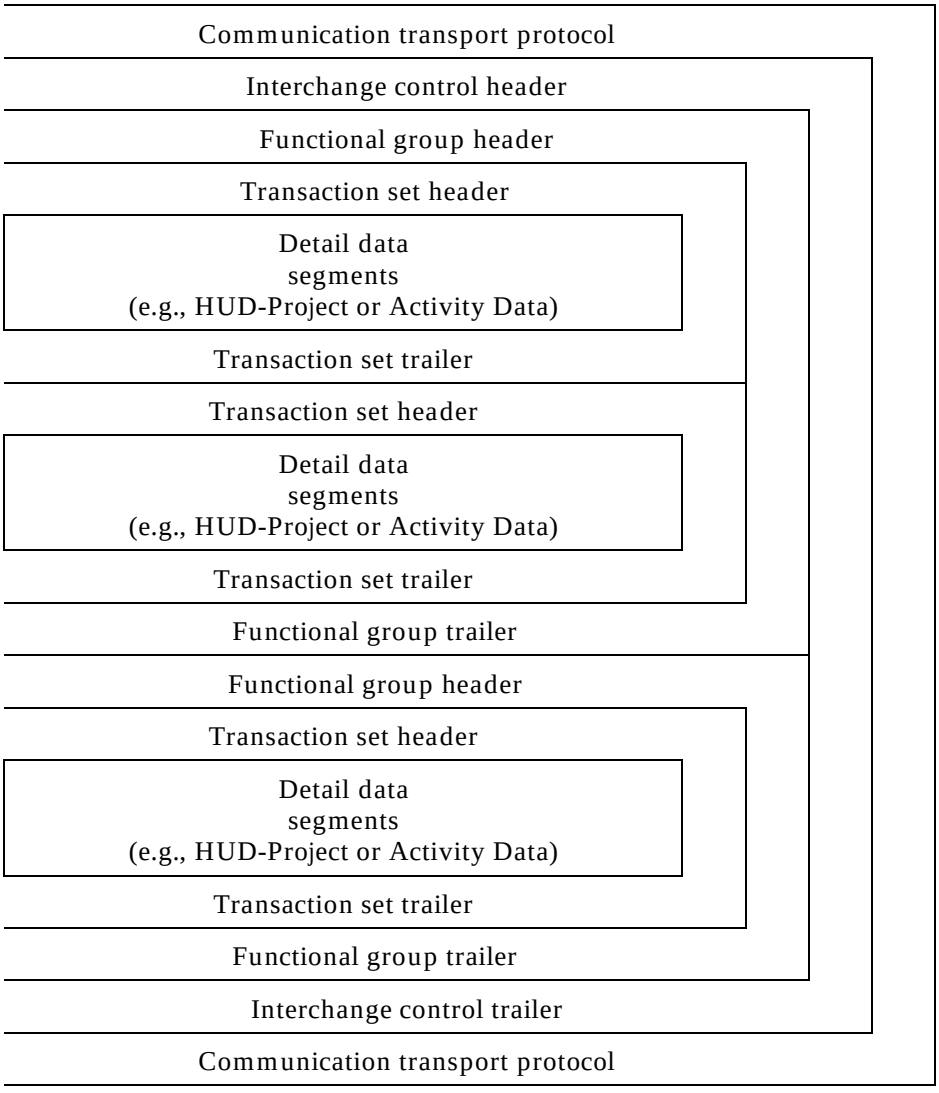
N	=	Numeric
R	=	Decimal
ID	=	Identification code found in data dictionary
AN	=	Alphanumeric string
DT	=	Date in YYMMDD format
TM	=	Time in HHMM form using a 24-hour clock

1/30 — Minimum/maximum length for the data element.

Communications Envelope - Grammar Edits

A communications envelope is required for each EDI communications session. A communications envelope consists of a communications protocol, e.g., a Value Added Network and an interchange control header and trailer, which enclose one or more subordinate electronic envelopes known as functional groups. A group of like transaction sets, e.g., a group of project or activity data, is placed in a functional group envelope. The functional group has a header and trailer, each with a matching control number. Figure III-1 is a graphic that demonstrates the construction of a multiple transaction set transmission and the corresponding electronic envelope.

Figure III-1
Communications Envelope



In a communications session, the interchange envelope contains control information about you and your trading partner(s) and indicates the number of functional groups included in the transmission. Therefore, an interchange is the set of information which is transferred as

a whole in a single communications session. At the beginning and end of an interchange, the header and trailer provide general information about the EDI messages being interchanged, including EDI addressing information. Similarly, each functional group of EDI messages within an interchange contains a header and trailer.

An interchange header contains information such as sender and receiver EDI address, date and time of preparation, unique interchange control number, and acknowledgment request. The interchange trailer contains a count of functional groups in the interchange and a unique interchange control number.

A functional group header and trailer contain information similar to that required for the interchange control.

The portion of the communications envelope that provides information on both the grantee and its trading partner (CPD) is called the Interchange Control Header (ISA Segment). Complete specifications for the ISA segment are provided in Appendix C.

The data is compressed and organized into one continuous data stream and then surrounded by the communication protocol envelope for error-free and economic data transmission..

Data Mapping

Mapping is the process of identifying the standard data element's relationship to application data elements. It is the process in which information held in one format is restructured to a different format.

To assist in the use of a transaction set, a data mapping guide is used. The guide presents each of the segments and the constituent data elements. To use the guide effectively, it is important to understand each of the components of the guide. The following list defines each of the components of an individual segment description.

Data Value Guidance — Provides CPD-specific information about the segment and individual data elements. Instructs the user how the transaction set must be used in conducting electronic business with HUD.

Position — Specifies the order (usually in multiples of ten) in which the segment appears in the transaction set. The order is originally specified in multiples of ten to assist in the maintenance of the transaction set. For example, if a segment is later required between 010 and 020, the new segment will be given the designation of 015. This procedure then eliminates the requirement of renumbering segments during the maintenance of the transaction set.

Segment Description — Identifies the segment and provides all relevant information about the segment composition, including the data elements of which the data segment is constructed.

Segment — This is the segment identifier which includes a two or three digit code assigned to identify the segment and the name of the segment.

Table — Indicates table location of the segment. Three table areas can be contained within any transaction set: Table 1 — header information; Table 2 — body detail; and Table 3 — summary information about the transaction. Not all tables are used in *every* transaction set. For example, transaction set 864 does not contain a Table 3.

Usage — Indicates whether the segment is **M**andatory or **O**ptional.

Max Use — Indicates the maximum number of times the segment can be used at the specific position in a transaction set.

Loop — Indicates the loop, if any, in which this segment is contained. A **0** indicates that the segment is **not** contained within a loop.

Purpose — Indicates the general function of the segment. For example, **ST** always indicates the start of a transaction and **SE** indicates the end of a transaction.

Syntax Notes - Indicate the syntactical use of the data elements within a segment. Syntax notes indicate whether data elements are **R**equired, **P**aired, or **C**onditional. The **X** designator in the data element attributes column flags the existence of syntax notes. For example, **R**0203 indicates that either data element 02 or 03 must be used; whereas, **P**0304 indicates that if either 03 or 04 is present, then the other is required. **C**0203 indicates that data element 03 is required when 02 is present.

Semantic Notes - Presents notes that provide the contextual meaning of the data elements used within a specific segment in a transaction set. For example, the semantic notes listed in the mapping guide closely follow the semantic notes for the ANSI ASC X12 approved standards.

Comment — Provides additional information regarding the use of the segment.

Data Element Summary — Provides information about each of the data elements contained in the segment. Information consists of the following:

Reference Description — Indicates the data element identifier and a two-digit sequence number. For example, ST01 is the first data element of the ST segment.

Data Elements — Provides the number of the data element as referenced in the Data Dictionary.

Name — The name of the data element.

Attributes — Indicates the attributes of the data element: usage, type, and minimum/maximum length.

The Data Value Guidance section also provides information about the individual data elements as they relate to the individual application. This information is useful in terms of the codes that are appropriate for each of the data elements.

The following pages presents the ST segment page of a data mapping guide. The ST segment is the transaction set header used with every transaction set. It, therefore, provides a good example of the components of a data mapping guide. The components of the mapping guide can be presented in a corresponding data diagram. For example, the ST segment would be diagrammed as follows:

The ST line of transmission would appear as follows:

ST*864*0001$^{N}/_{L}$

The ST segment then consists of a ST01 element of 864 (i.e., the Transaction Set Identifier) and a ST02 element of 0001 (Transaction Set Control Number).

Data Value Guidance	Pos.	Segment Description					
The ST segment is required each time a Transaction Set is sent.	010	Segment: **ST Transaction Set Header** Table: 1 Usage: M Max Use: 1 Loop: 0 Purpose: To indicate the start of a transaction set and to assign a control number. Comment: The transaction set identifier (ST01) is intended for use by the translation routines of the interchange partners to select the appropriate transaction set definition (e.g., 864 selects the Text Message transaction set).					
		Data Element Summary					
		Ref. Des.	Data Elem.	Name	X12 Attributes		
		ST01	143	Transaction Set Identifier Code Code uniquely identifying a Transaction Set. Code Definition 864 Text Message	M	ID	3/3
NOTE: The control number is assigned by the sender. It should be sequential within the functional group to aid in error recovery and research. The control number in the SE segment (SE02) must be identical to the control number in the ST segment for each transaction.		ST02	329	Transaction Set Control Number Identifying control number that must be unique within the transaction set functional group assigned by the originator for a transaction set.	M	AN	4/9

The following pages present a series of diagrams that demonstrate the composition of a mapping guide. The diagrams illustrate how each of the major components is used within the HUD business environment and, therefore, assists the user in "mapping" from the EDI transaction set to the paper-based form from which it was derived. The mapping guide shown below in the example is the **ST**, **PER**, and **MIT** segments. (The **PER** and **MIT** segments are shown only to exemplify the usage of syntax and semantic notes.) See Section VI for transaction details.

Data Value Guidance Provides general or CPD-specific information about the segment and individual data elements. Instructs the user on how the transaction set must be constructed in conducting business with CPD. All segments are used unless guidance is given stating that CPD does not use the segment. In addition, two designators, **M** and **O**, are used to indicate **M**andatory and **O**ptional sending requirements for data elements when they differ from the X12 specifications.

Position
Specifies the order (usually in multiples of ten) in which the segment appears in the transaction set.

Segment Description
Identifies the segment and provides all relevant information about the segment composition

<table>
<tr><th>Data Value Guidance</th><th>Pos.</th><th colspan="6">Segment Description</th></tr>
<tr><td rowspan="4">The ST segment is required each time a Transaction Set is sent.</td><td rowspan="4">010</td><td colspan="6">Segment: ST Transaction Set Header

Table: 1
Usage: M
Max Use: 1
Loop: 0
Purpose: To indicate the start of a transaction set and to assign a control number.
Comment: The transaction set identifier (ST01) is intended for use by the translation routines of the interchange partners to select the appropriate transaction set definition (e.g., 864 selects the Text Message transaction set).</td></tr>
<tr><td colspan="6">Data Element Summary</td></tr>
<tr><td>Ref. Des.</td><td>Data Elem.</td><td>Name</td><td colspan="3">X12 Attributes</td></tr>
<tr><td>ST01</td><td>143</td><td>Transaction Set Identifier Code
Code uniquely identifying a Transaction Set.

<u>Code</u> <u>Definition</u>
864 Text Message</td><td>M</td><td>ID</td><td>3/3</td></tr>
</table>

Segment Description					
Segment:	**ST Transaction Set Header**				
Table:	1				
Usage:	M				
Max Use:	1				
Loop:	0				
Purpose:	To indicate the start of a transaction set and to assign a control number.				
Com-ment:	The transaction set identifier (ST01) is intended for use by the translation routines of the interchange partners to select the appropriate transaction set definition (e.g., 864 selects the Text Message transaction set).				

Data Element Summary					
Ref. Des.	Data Elem.	Name	X12 Attributes		
ST01	143	Transaction Set Identifier Code Code uniquely identifying a Transaction Set. Code Definition 864 Text Message	M	ID	3/3
ST02	329	Transaction Set Control Number Identifying control number that must be unique within the transaction set functional group assigned by the originator for a transaction set.	M	AN	4/9

Segment Identifier — Includes a two or three alphanumeric character code assigned to identify the segment, followed by the segment name.

Segment Description					
Segment: **ST Transaction Set Header**					
Table: 1					
Usage: M					
Max Use: 1					
Loop: 0					
Purpose: To indicate the start of a transaction set and to assign a control number.					
Com-ment: The transaction set identifier (ST01) is intended for use by the translation routines of the interchange partners to select the appropriate transaction set definition (e.g., 864 selects the Text Message transaction set).					
Data Element Summary					
Ref. Des.	Data Elem.	Name	X12 Attributes		
ST01	143	Transaction Set Identifier Code Code uniquely identifying a Transaction Set. Code Definition 864 Text Message	M	ID	3/3
ST02	329	Transaction Set Control Number Identifying control number that must be unique within the transaction set functional group assigned by the originator for a transaction set.	M	AN	4/9

Table indicates table location of the segment. There are three possible tables: Table 1 — header information; Table 2 — body detail; and Table 3 — summary information about the transaction. Table 1 will always be present. Tables 2 & 3 are optional depending upon the design of the transaction set.

Max Use -- Indicates the maximum number of times the segment can be used in a transaction

Usage -- Indicates whether the segment is **M**andatory or **O**ptional.

Segment Description					
Segment: **ST Transaction Set Header**					
Table: 1					
Usage: M					
Max Use: 1					
Loop: 0					
Purpose: To indicate the start of a transaction set and to assign a control number.					
Com-ment: The transaction set identifier (ST01) is intended for use by the translation routines of the interchange partners to select the appropriate transaction set definition (e.g., 864 selects the Text Message transaction set).					
Data Element Summary					
Ref. Des.	Data Elem.	Name	X12 Attributes		
ST01	143	Transaction Set Identifier Code Code uniquely identifying a Transaction Set. Code Definition 864 Text Message	M	ID	3/3
ST02	329	Transaction Set Control Number Identifying control number that must be unique within the transaction set functional group assigned by the originator for a transaction set.	M	AN	4/9

Loop indicates the loop, if any, in which this segment is contained. **0** indicates that this segment is **not** contained within a loop

Purpose indicates the general function of the segment. For example, **ST** always indicates the start of a transaction and **SE** indicates the end of a transaction.

Segment Description

Segment: **PER Administrative Communications Contact**

Table: 1

Usage: O

Max Use: 1

Loop: N1

Purpose: To identify a person or office to whom administrative communications should be directed.

Syntax Notes: If either PER03 or PER04 is present, then the other is required.

Data Element Summary

Ref. Des.	Data Elem.	Name	X12 Attributes		
PER01	366	Contact Function Code Code identifying the major duty or responsibility of the person or group named. Code Definition EA EDI Coordinator SM Submitting Contact	M	ID	2/2
PER02	93	Name Free-form name.	O	AN	1/35
PER03	365	Communication Number Qualifier Code identifying the type of communications number.	X	ID	2/2

Syntax Notes Presents notes that indicate the syntactical use of the data elements within a segment as defined by the X12 standard. Syntax notes may indicate a **R**equired, **P**aired, or **C**onditional use. An **X** designator in the attributes column flags the presence of syntax notes. For example, P0304 indicates the **Paired** use of 03 or 04.

Segment Description

Segment: **MIT Message Identification**

Table: 2

Usage: M

Max Use: 1

Loop: MIT

Purpose: To identify the beginning of a specific message.

Semantic Notes: MIT01 contains the message number that will be used to refer to this data set.
MIT02 contains the message subject.

MIT03 default is 80 characters.

MIT04 default is 66 lines.

Data Element Summary

Ref. Des.	Data Elem.	Name	X12 Attributes		
MIT01	127	Message Identification Reference Number identifying this data set.	M	AN	1/30
MIT02	352	Code Definition I03 EDI_Project I04 EDI_Project_Description I05 EDI_Project_Address I06 EDI_Act I07 EDI_Activity_Descript I08 EDI_CDBG_LMA_AC I09 EDI_CDBG_LMC_AC I10 EDI_CDBG_LMH_AC I11 EDI_CDBG_LMJ_AC I12 EDI_CDBG_SBA_AC I13 EDI_CDBG_AREA_C I14 EDI_CDBG_DISPLAC I15 EDI_CDBG_REPLAC I16 EDI_CDBG_REP_TXT I17 EDI_CDBG_BEN_TXT I18 EDI_ESG_ACTIVITY			

Segment Description					
		I19 EDI_HOME_ACT_SE I20 EDI_HOME_ACT_FIN I21 EDI_HOME_ACT_LO I22 EDI_HOME_ACT_M I23 EDI_HOME_ACT_DO I24 EDI_HOME_LOC_BE I25 EDI_HM_TN_BA_BE I26 EDI_HM_TN_BA_AC I27 EDI_HOPWA_ACTIVI I28 EDI_HOPWA_DEPAR I29 EDI_HOPWA_EXPEN I30 EDI_HOPWA_HOUS			

Semantic Notes : Presents notes that provide the contextual meaning of the data elements used within a specific segment in a transaction set. The semantic notes listed in this Mapping example closely follow the semantic notes for the ASC X12 approved standards.

Segment Description

Segment: **ST Transaction Set Header**

Table: 1

Usage: M

Max Use: 1

Loop: 0

Purpose: To indicate the start of a transaction set and to assign a control number.

Com-ment: The transaction set identifier (ST01) is intended for use by the translation routines of the interchange partners to select the appropriate transaction set definition (e.g., 864 selects the Text Message transaction set).

Data Element Summary

Ref. Des.	Data Elem.	Name	X12 Attributes		
ST01	143	Transaction Set Identifier Code Code uniquely identifying a Transaction Set. Code Definition 864 Text Message	M	ID	3/3
ST02	329	Transaction Set Control Number Identifying control number that must be unique within the transaction set functional group assigned by the originator for a transaction set.	M	AN	4/9

Comment presents notes that relate the segment to the application in which it is used. In this case, the comment is geared toward the 864 transaction set.

Data Mapping Guide Interchange Control Segments

Data Element Summary provides information about each of the data elements contained within the segment. **Ref. Des.** — The data element reference designator is the data segment identifier plus a two-digit sequence code. **Data Element** — The index reference number to the Data Dictionary standard where the content of all data elements is found. **Name** — Name of the data element and its definition. When specific codes are listed in this mapping example, they represent the set of codes to be used when the data element is used. Note that the codes with Code Number (e.g., 194) and code definition (e.g., Period Ending) listed represent existing ANSI ASC X12 approved data element codes.**X12 Attributes** — Includes the data element requirement designator (**M**andatory, **O**ptional, **X**-Conditional), data element type (ID, AN, NO, R), and data element size (minimum / maximum). The data element requirement designator **X** indicates the presence of syntax

Data Value Guidance	Pos.	Segment Description					
		Segment: **ISA Interchange Control Header** Usage: M Purpose: To start and identify an interchange of one or more functional groups and interchange-related segments. Example: **ISA*00* *00* *ZZ*UOGCODE&NUM *ZZ*HUDTEST *970910*1530*U*00305*123456789*0*T^**					
		Data Element Summary					
		Ref. Des.	Data Elem.	Name	X12 Attributes		
Must be 00		ISA01	I01	Authorization Information Qualifier Code to identify the type of information in the Authorization Information Code Definition 00 No Authorization Information Present (No Meaningful Information in I02)	M	ID	2/2
Must be 10 spaces		ISA02	I02	Authorization Information Information used for additional identification or authorization of the sender or the data in the interchange. The type of information is set by the Authorization Information Qualifier.	M	AN	10/10
		ISA03	I03	Security Information Qualifier Code to identify the type of information in the Security Information.	M	ID	2/2

		Segment: **ISA Interchange Control Header (continued)**					
		Data Element Summary					
		Ref. Des.	Data Elem.	Name	X12 Attributes		
				Code Definition 00 No Security Information Present (No Meaningful Information in I04)			
Must be 00							
Must be 10 spaces		ISA04	I04	Security Information This is used for identifying the security information about the sender or the data in the interchange. The type of information is set by the Security Information Qualifier.	M	AN	10/10
Must be ZZ for trading partner, 01 for service bureau.		ISA05	I05	Interchange ID Qualifier Qualifier to designate the system/method of code structure used to designate the sender or receiver ID element being qualified. Code Definition ZZ Mutually Defined 01 DUNS (Dun & Bradstreet) Number	M	ID	2/2
Must be Grantee Unit of Government Code and Number ID for trading partner, DUNS number for service bureau with trailing blanks to meet 15 character req.		ISA06	I06	Interchange Sender ID Identification code published by the sender for other parties to use as the receiver ID to route data to them. The sender always codes this number in the sender ID element.	M	AN	15/15

		Segment: **ISA Interchange Control Header (continued)**					
		Data Element Summary					
		Ref. Des.	Data Elem.	Name	X12 Attributes		
Must be ZZ for T.P. or 01 for Service Bureau .		ISA07	I05	Interchange ID Qualifier Qualifier to designate the system / method of code structure used to designate the sender or receiver ID element being qualified. Code Definition ZZ Mutually Defined 01 DUNS (Dun & Bradstreet) Number	M	ID	2/2
Must be HUDTEST space filled out to 15 characters. Use Duns Number spaced filled for SB.		ISA08	I07	Interchange Receiver ID Identification code published by the receiver of the data. When sending, it is used by the sender as their sending ID, thus other parties sending to them will use this as a receiving ID to route data to them.	M	AN	15/15
Must be in YYMMDD format		ISA09	I08	Interchange Date Date of the interchange.	M	DT	6/6
		ISA10	I09	Interchange Time Time of the interchange.	M	TM	4/4
Must be U		ISA11	I10	Interchange Control Standards Identifier Code to identify the agency responsible for the control standard used by the message that is enclosed by the interchange header and trailer. Code Definition U U.S. EDI Community of ASC X12, TDCC, and UCS	M	ID	1/1

		Segment: **ISA Interchange Control Header (continued)**					
		Data Element Summary					
		Ref. Des.	Data Elem.	Name	X12 Attributes		
Must be version number mutually agreed to by HUD and trading partner (e.g. 00305 - Draft Standards Approved for Publication by ASC X12 Procedures Review Board Through October 1994)		ISA12	I11	Interchange Control Version Number This version number covers the interchange control segments.	M	ID	5/5
This data interchange control number must be identical to the same element in the associated Interchange Control Trailer IEA02.		ISA13	I12	Interchange Control Number This number uniquely identifies the interchange data to the sender. It is assigned by the sender. Together with the sender ID it uniquely identifies the interchange data to the receiver. It is suggested that the sender, receiver, and all third parties be able to maintain an audit trail of interchanges using this number.	M	NO	9/9
Must be 0		ISA14	I13	Acknowledgment Requested Code sent by the sender to request an interchange acknowledgment. Code Description 0 No Ack. Req. 1 Interchange Ack. Req.	M	ID	1/1

		Segment: **ISA Interchange Control Header (continued)**					
		Data Element Summary					
		Ref. Des.	Data Elem.	Name	X12 Attributes		
Enter P when status has changed to production. Enter T for test period only.		ISA15	I14	Test Indicator Code to indicate whether data enclosed by this interchange envelope is test or production. Code Definition P Production Data T Test Data	M	ID	1/1
The value of this element dictates the value the translation software employs for component element separation throughout the interchange. Must remain constant throughout the interchange.		ISA16	I15	Subelement Separator This is a field reserved for future expansion in separating data element subgroups.	M	AN	1/1

Data Value Guidance	Pos.	Segment Description					
This data Interchange Control Number must be identical to the same element in the associated Interchange Control Header ISA13.		Segment: **IEA Interchange Control Trailer** Usage: M Purpose: To define the end of an interchange of one or more functional groups and interchange-related control segments. Example: **IEA*1*123456789**					
		Data Element Summary					
		Ref. Des.	Data Elem.	Name	X12 Attributes		
		IEA01	I16	Number of Included Functional Groups A count of the number of functional groups included in a transmission.	M	NO	1/5
		IEA02	I12	Interchange Control Number This number uniquely identifies the interchange data to the sender. It is assigned by the sender. Together with the sender ID it uniquely identifies the interchange data to the receiver. It is suggested that the sender, receiver, and all third parties be able to maintain an audit trail of interchanges using this number.	M	NO	9/9

Data Mapping Guide

Functional Group Segment

Data Value Guidance	Pos.	Segment Description					
☞ A functional group of related transaction sets, within the scope of X12 standards, consists of a collection of similar transaction sets enclosed by a functional group header.		Segment: **GS Functional Group Header** Usage: M Max Use: >1 Purpose: To indicate the beginning of a functional group and to provide control information Example: **GS*TX*UOGCODE&NUM*HUDTEST *970910*1530*123456789*X*003050** Comment: Service Bureaus must group all like transaction sets for a grantee in one functional group. Service Bureaus must also group all like transaction sets related to one grantee in one functional group.					
		Data Element Summary					
		Ref. Des.	Data Elem.	Name	X12 Attributes		
Must be TX for Text Message - CPD's specific transaction set.. Must be FA for Functional Acknowledgments.		GS01	479	Functional Identifier Code Code identifying a group of application related transaction sets. Code Definition TX Text Message Transaction Set (864) FA Functional Acknowledgment (997)	M	ID	2/2

		Segment: **GS Functional Group Header (continued)**					
		Data Element Summary					
		Ref. Des.	Data Elem.	Name	X12 Attributes		
Same as ISA06.		GS02	142	Application Sender's Code Trading partner ID (Grantee's Unit of Government Code & number).	M	AN	2/15
Same as ISA08.		GS03	124	Application Receiver's Code Code identifying party receiving transmission. Codes agreed to by trading partners.	M	AN	2/15
Must be in YYMMDD format		GS04	373	Date	M	DT	6/6
Must be in HHMM format.		GS05	337	Time	M	TM	4/8
This data Group Control Number must be identical to the same element in the associated Functional Group Trailer GE02.		GS06	28	Group Control Number Assigned number originated and maintained by the sender.	M	NO	1/9
Must be X		GS07	455	Responsible Agency Code Code used in conjunction with data element 480 to identify the issuer of the standard. Code Definition X Accredited Standards Committee X12	M	ID	1/2

		Segment: **GS Functional Group Header (continued)**					
		Data Element Summary					
		Ref. Des.	Data Elem.	Name	X12 Attributes		
Enter version number mutually agreed to by CPD and trading partner (e.g. 003050 - Draft Standards Approved for Publication by ASC X12 Procedures Review Board Through October 1994)		GS08	480	Version / Release / Industry Identifier Code Code indicating the version, release, subrelease, and industry identifier of the EDI standard being used. Code Definition 3050 Draft Standards Approved for Publication by ASC X12 Procedures Review Board Through October 1994.	M	AN	1 / 12

Data Value Guidance	Pos.	Segment Description					
		Segment: **GE Functional Group Trailer** Usage: M Max Use: >1 Purpose: To indicate the end of a functional group and to provide control information. Example: **GE*1*123456789** Comment: There must be one Functional Group Trailer for each Functional Group Header.					
		Data Element Summary					
		Ref. Des.	Data Elem.	Name	X12 Attributes		
This data Group Control Number must be identical to the same element in the associated Functional Group Header (GS06)		GE01	97	Number of Transaction Sets Included Total number of transaction sets included in the functional group or interchange (transmission) group terminated by the trailer containing this data element.	M	NO	1/6
		GE02	28	Group Control Number Assigned number originated and maintained by the sender.	M	NO	1/9

		Data Element Summary					
		Ref. Des.	Data Element	Name	X12 Attributes		
		ST01	143	Transaction Set Identifier Code Code uniquely identifying a Transaction Set. Code Definition 864 Text Message	M	ID	3/3

SECTION IV — TECHNICAL ENVIRONMENT

Each trading partner needs three general resources to interchange data electronically: computer hardware, software, and communication capabilities (i.e. phone lines).

To transmit data between trading partners, certain hardware and software components must be in place. These products serve to convert standard text data into an X12 structure, arrange data into sets which match the receiving system, and execute the action required to transmit data across the telecommunications network. A Value Added Network (VAN), which is discussed later, serves the function of a bulk mail holder, providing temporary storage while waiting for addressees to retrieve their data items.

The items listed below are the *minimum* resources needed to begin submitting and receiving data via EDI:

- Mailbox ID from an established VAN provider;
- Personal Computer (486 processor or above);
  - Minimum of 640K RAM, 8 meg RAM
  - Minimum of 20 MB hard disk storage space
  - MS-DOS 6.22 or above
- Modem;
  - 14.4 bps Modem
  - Telephone jack & analog telephone line
  - RS232 cable for connecting modem to phone jack
- Data mapping interface or mapping software; or
- EDI translation software.

This section of the Implementation Guide outlines each of these requirements and provides guidance for acquiring the appropriate resources to support the EDI efforts.

Hardware Requirements

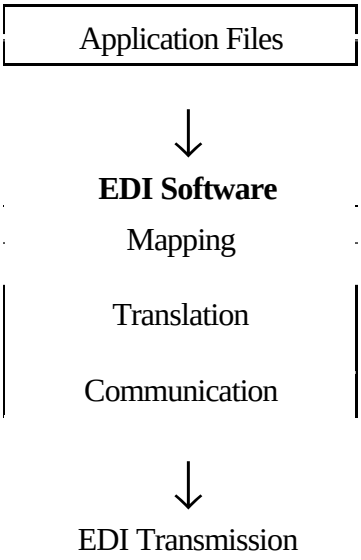
Personal Computers (PC), minicomputers, or mainframes can be used to transact EDI. The hardware platform selected depends upon the information system requirements and constraints of each trading partner.

Software Requirements

In the EDI environment, software serves the key role of routing and translating user application data into standard transaction sets. These processes entail moving data from an application by abstracting data from data bases, formatting or translating the file into a standard X12 format, and depositing that data into a mailbox for delivery to the trading partner.

Mapping

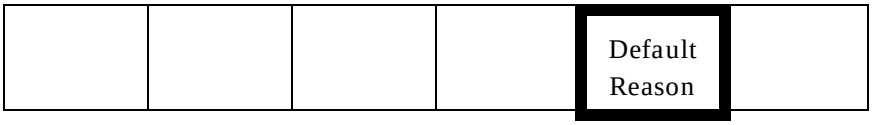
The mapping process converts trading partner-specific application data into an EDI vendor-specific flat file. The flat file does not need to contain all of the data from the original application. However, this process must be customized to each application. The process can be accomplished either through programming **or** through the use of commercially available EDI mapping software.

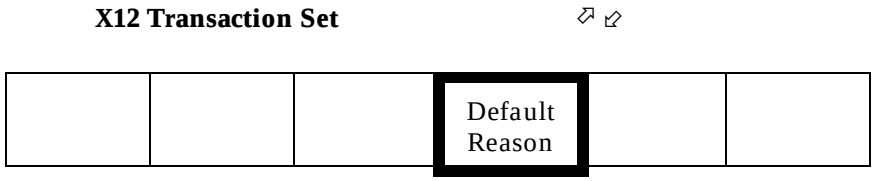


Mapping performs the following functions by setting up a profile for each type of incoming and outgoing file format (transaction set):

- **Separates EDI data from non-EDI data**. All information contained in an application system may not be relevant to the particular transaction set.
- **Filters information for trading partners**. The mapping function provides only that information from an application that is relevant to a particular message.
- **Converts data values**. Mapping converts data to the appropriate value range or equivalent value as required by a trading partner or the transaction set.
- **Re-compiles or reformats data**. Reformatting the application data includes:
  - **Changes the position of the data** — An incoming data element is mapped to multiple places in the reformatted file.

Application Data File





- **Changes alphanumeric data length** — Field lengths are truncated or expanded as required.

- **Converts one type of numeric data to another type** — Numeric data can be rounded or the number of digits following a decimal can be truncated or expanded as required.

- **Dates are reformatted** — For example, a date can be changed from the format 09/10/99 to 09101999.

Translation Software

The translation process converts an EDI vendor-specific flat file (ASCII or EBCDIC format) into an X12 standard format. **Please note that this software may be included in most standard EDI mapping software available for purchase.**

EDI standards are *not* a computer language and there is no *incompatibility* with existing systems — one electronic standard can be used across multiple languages. Translation software is required for this purpose. The major function that translation software performs is converting data from a company- or organization-specific format to an EDI standard format.

EDI software generally uses a table structure to perform the function of converting information to the proper EDI format. The software includes tables consisting of the standard data dictionary and syntax rules. This process is known as *translation* and relates the information formed in the mapping process to a particular transaction set.

Once translation is complete and basic error checking performed, the software dials the communication network and sends the formatted data to HUD's VAN using acceptable communication protocols.

For incoming EDI transmissions, this process occurs in reverse.

Translation software may include several standards, rules, syntax, and dictionaries for major standards. It may also contain facilities to accommodate many possible network communication scripts.

EDI software should possess the following characteristics:

- Table-driven (rather than code-drive) — Transaction sets, segments, and data elements are described in tables. "Table-driven" subroutines are preferred to generate processing of information. This mechanism permits the use of multiple transaction sets.

- Editing capabilities and error checking — The software provides built-in error checking capabilities such as identifying appropriate types of data (i.e., numeric versus alphanumeric) and data element length against the EDI standard.

- Customizing ease — The software can be customized for multiple transaction sets and/or EDI applications.

- Audit options — An audit trail is the presence of information processing media and procedures that permit an auditor to trace a transaction through the various steps of processing, communication, and storage. It may include data logs, transaction control numbers, and controlled computer processing procedures.

There are many EDI software vendors available that provide a wealth of software from which to choose. Before deciding on a software product, take a moment to determine what hardware platform to use, and decide what role beyond HUD's initiative, EDI will serve as part of your other business strategies with your business partners.

Communication Requirements

Direct communication to HUD from a trading partner would require that both use similar communication protocols, the same transmission speeds, available communication lines, and compatible computer hardware. A diverse group of trading partner equipment and configurations, precludes this as a viable option. Therefore, HUD has chosen to receive and transmit EDI transactions via a Value Added Network (VAN).

HUD will be using SprintEDI for its communication services. However, there is no requirement for HUD trading partners to use SprintEDI.

Value Added Networks

A VAN is a third party communications service that acts as a postal system for EDI. A VAN serves as an intermediary electronic post between business partners. The VAN operates as a store-and-forward system that is similar to electronic mail (e-mail), where everyone has a mailbox. By using a VAN, a trading partner's system can communicate the transaction sets at any time; the VAN is always there to take outgoing mail (transaction sets) and deliver any incoming transaction sets.

EDI value added network link between them and their trading partners. The EDI network offers several important advantages to its users, including:

- Connects dissimilar communications protocols;

- Provides mailbox storage for EDI messages;

- Performs X12 compliance checking;

- Screens messages and rejects non-valid trading partner attempts to send data to a mailbox; and

- Provides a comprehensive audit trail for all messages which have flowed through the network.

Because an EDI network has the ability to provide a broad range of communications access alternatives — including various protocols, line speeds, and communications options — the trading partner does not have to worry about HUD's communication environment. The network handles such matters for its clients.

The VAN offers error-checking, audits, controls, and security to ensure data integrity, quality, recoverability, and safety. A variety of mechanisms will enable the user to track and monitor data flow. The VAN will also feature built-in redundancies and physical and system security controls to protect data from loss and unauthorized access.

VANs provide a range of associated technical and consulting services, the most basic of which is protocol conversion and line speed conversion to permit the communication between two users. Some VANs also offer standards conversion to the X12 standards and store and forward capabilities.

With the number of heterogeneous systems, networks, and communications protocols in existence, there has to be a single point of interconnectivity of systems. VANs provide interconnectivity and the compatibility needed for any computer system to talk with one or many computer systems. Moreover, this function is provided at a fraction of the cost that each trading partner would incur if the VAN capability was not available.

To communicate to a VAN provider, the user must have at a minimum the following communications platform capabilities:

- Asynchronous (1200 to 14.4 kbps and above);
- Bisynchronous (2400 to 28.8 bps and above); or
- SNA (9.6 to 56 kbps and above) (Systems Network Architecture which can include VTAM LU 6.2, 3770 RJE or 3770 NJE).
- Internet Access;
- TCP/IP which includes FTP utilizing Frame Relay, ISDN, or Leased Lines.

Asynchronous communications protocols that may be used to establish a communications link to a VAN are:

- Xmodem; or
- Ymodem.

Asynchronous line and modem speeds require communications between 1200 and 9600 baud, although most VANs support 14.4 bps and higher.

Bisynchronous communications protocols that may be used to establish a communication link to a VAN are:

- 2780;
- 3780;
- Generic BSC.

Bisynchronous line and modem speeds commonly include:

- 2400 baud;
- 4800 baud;
- 9600 baud and higher.

SECTION V — IMPLEMENTING EDI

This section provides guidelines for the successful implementation of EDI in your organization. It addresses the steps required to begin submitting documents electronically, including the Trading Partner Agreement, security and quality control issues, testing, ongoing support resources and contacts, and a suggested implementation checklist and time schedule.

It is important to remember that EDI changes the way in which you do business. It affects the support and operational mission of your organization. Consequently, management as well as technical issues should be addressed.

In general, the following instructions are provided for an EDI implementation:

- Consider EDI as a delivery vehicle to populate IDIS, a business solution — not simply a technical issue;
- Adhere to ANSI 3050 published standards;
- Initiate pilot test;
- Provide an audit trail of EDI activities; and
- Integrate EDI with internal systems and business procedures.

How to Begin Submitting Transactions Electronically

There are a number of criteria for the initiation of EDI. The following is a partial list of HUD requirements:

- Contact CPD's Representative to coordinate an implementation schedule;
- At CPD's direction, develop a technical environment as described in Section IV of this guide;
- Modify internal operational environment to facilitate necessary changes;
- Receive and sign a Trading Partner Agreement with CPD Addendum;
- Conduct testing; and

Trading Partner Agreement

The Trading Partner Agreement is a key document in the implementation of EDI. It describes the expectations and obligations of CPD and their EDI trading partners.

This agreement outlines all conditions that will allow the parties to communicate electronically with each other. The agreement further describes the general procedures and policies to be followed when EDI is used for transmitting and in the future receiving electronic business information in lieu of creating one or more paper documents normally associated with conducting business with HUD.

The agreement is an essential prerequisite for initiation of EDI transmissions. The agreement states that the parties intend to operate in the same manner as though they were exchanging hardcopy paper documents. The associated Addenda provide additional information for those transactions that you will trade with HUD.

A copy of the Trading Partner Agreement and each Addendum used as a HUD baseline is found in Appendix B.

Quality Control and Security

The issues of quality control and security are important aspects of a well designed EDI implementation process. Many of your manual and automated processes will have to be re-addressed to appropriately ensure ongoing quality control and security.

EDI can facilitate the quality control and security processes with built-in audit trails that are available through the EDI software and third party networks. In EDI, all transactions are time and date-stamped automatically. Most EDI software provides a log of **all** transactions which provides an excellent audit trail. An Inbound Control Log and Outbound Control Log supply an excellent mechanism for ensuring appropriate management of all EDI transmissions. Additionally, VANs may provide audit information such as an activity log, showing what was received, and what was sent, along with the corresponding addresses for the trading partners. Also what, if any transactions are in error or remain in the VAN mailbox.

The EDI 864 transaction set also provides a control number which is an effective means of regulating and monitoring receipt and delivery of EDI transmissions. Each transaction set is conveyed in a communications envelope. All EDI transmissions are controlled by the interchange control header and trailer. The interchange header and trailer contain information which identifies and authorizes the sender of all EDI transmissions to HUD through the authorization and security identifiers, sender and receiver ID numbers, date, and time. In addition, usage of a standards identifier, version number, and control number also safeguards the sender and receiver on all EDI transmissions.

From a HUD perspective to maintain quality control measures, EDI transactions/communications with HUD will be restricted to CPD-approved grantees or sub-recipients with approved trading partnerships established on the Van(s) and valid EDI Information on file with HUD.

A CPD trading partner is approved for trading when the following information has been provided via the EDI Information Request Form:

- Name and address of Grantee or trading partner;

- Technical contact name and phone number;
- Management contact name and phone number;
- Unit of Government Code and Number;
- VAN service provider(s) used,

Any time any of this information or any other pertinent information changes, it is imperative that the CPD Representative be contacted immediately.

Management Reports. Automated reports are available from your VAN, and translation/mapping software. It is recommended that you ensure your VAN and software provide similar transaction information. The translation software may provide detailed information about electronic transmissions both sent and received.

Translation Software — The following reports are typically available from the translation software:

- Activity Send log indicating transmitted transaction sets and control information;
- Activity Receive log indicating received transaction sets and control information;
- Formatted report of both incoming and screen-prepared data; and
- Communication management reports related to EDI error activity.

Mapping Software — The following reports are typically available from the mapping software:

- **Message/Status Log** — Provides a log of all EDI messages for a range of dates or events.
- **Event Log** — Used for host notification of event results.
- **Session Totals Report** — Summarizes transmission totals for a range of events with subtotals for EDI transactions.
- **Data Generated Through the Data Base** — User defined ad-hoc report capability.

VAN — The following reports are typically available from the VAN:

- **Documents Received Report** — Provides a report of all documents (transaction sets) received by sender for a given time range.
- **Documents Delivered Report** — Details which documents that you have sent have been placed into the receiver's mailbox. Includes date and time delivered, trading partner ID, interchange tracking ID, group control number, and flag that document was retrieved.

- **Document Acknowledgment & Reconciliation Report** — Summarizes acknowledgments of documents sent organized by trading partner. Also includes tracking number and reference number.

- **Trading Partner Profile Report** — Alphabetical listing of trading partners, including mailbox/account ID, standard version used, and registration date.

- **Monthly Statistics Report** — Summarizes monthly statistics of EDI traffic.

Testing

Testing is required to ensure the accuracy of all components of the EDI solution. Testing ensures that:

- The mailbox and send and receive facilities are operational;

- Translation and mapping software are functioning properly; and

- Data is accurately mapped, translated, and transmitted between HUD and its trading partners.

Testing Procedures. Procedures are classified in two different groups. Internal testing is completed by the trading partner prior to testing with CPD and it consists of the following:

- Stand-alone testing; and

- VAN connectivity.

Stand-Alone Testing - To perform accurate stand-alone testing the trading partner must consider all possible scenarios of data when generating sample data from their daily work and creating X12 output. The X12 output should be reviewed and compared to the associated Data Mapping Guide for accuracy.

VAN Connectivity - Trading partner should test the connectivity with the chosen VAN and their mailbox on the VAN. If a trading partner is using a VAN other than SprintEDI, the trading partner needs to establish the trading partnerships between their VAN and SprintEDI. Upon completion of the above tests, the trading partner will test their system's connectivity with HUD's VAN test mailbox and EDI gateway using the same set of data as used in the stand-alone test. This test will continue until the data sent to the EDI gateway is received in proper format and the context is correct.

Two basic types of testing will be performed with CPD upon completion of Internal testing. They are:

- Simulated testing; and

- Limited pilot testing.

The Grantee should contact CPD Representative when ready to transfer the test data for the 864 transaction set. A mutually convenient time-frame will then be established for transferring the data files required for the transaction set.

Simulated Testing — Test transaction sets sent to HUD. The Grantee will send data according to sample maps provided by CPD. HUD will evaluate the transmitted data, return a functional acknowledgment and verbally comment accordingly. This process will continue until CPD is satisfied that the data is being transmitted accurately.

During the simulated testing period, HUD's trading partners will send transmissions to the designated test mailbox. When testing is completed, the production mailbox will be utilized.

The functional acknowledgment transaction set 997 sent to the trading partner by HUD, will not be tested for content but solely used to complete simulation of the entire transmission cycle.

Limited Pilot Testing — At CPD's designation, the trading partner will submit actual program data in electronic version. The electronic submissions will be manually checked by the HUD staff and comments will be made as appropriate. This process will continue until IDIS can be successfully populated.

Ongoing Support

The following subsections describe the business and technical support provided to CPD's EDI trading partners.

Business Support. Reporting requirements remain the same.

Technical Support. Technical support for the EDI hardware, software, and network should be provided by your EDI vendors. Maintain a list of appropriate vendor support numbers to assist in the implementation of the EDI system. The HUD EDI team provides limited implementation and operational technical support to trading partners.

The HUD EDI team will be available to provide support during implementation by responding to inquiries. To receive technical assistance during the implementation of the EDI system, call CPD.

Technical support provides the following functions:

- Answer questions regarding the transaction sets referenced in subsequent sections of this guide;
- Liaison for resolution of communication issues relating to the HUD Sprint VAN;
- Resolution of HUD system failures;
- Liaison to software vendors to assist in the implementation of vendor software (translation and mapping); and
- Answer questions regarding status of EDI transmissions.

Examples of when to call include:

- To get help with EDI data requirements; and
- To check status of transmission after receive has been verified by the grantee’s van.

Once you become operational, ongoing EDI support if needed will be provided by the *Help Desk*. The *Help Desk* provides assistance to trading partners via toll free telephone access. The *Help Desk* is staffed from 8:30 a.m. to 5:30 p.m. EST to assist in the resolution of EDI related operational issues. The number is 1-800-HUD-4EDI (1-800-483-4334). An answering machine will take your message after hours. Each trading partner calling the Help Desk should be prepared to leave their name, grantee name, phone number and a brief description of the problem. The Help Desk staff will log each call into the database in the order received and process calls accordingly.

Any changes made to your EDI environment after you are operational should be carefully controlled. It is advisable that whenever changes are made in the EDI software, a backup copy of the previous version should be kept for emergency production. If you are unable to transmit due to technical difficulties whether hardware or software related, you should communicate this to the applicable CPD Representative or Field Office Representative and to the EDI Help Desk. Your backup method of transmission must be mutually agreed upon by both HUD Headquarters and the grantee. Any requirements established by law, HUD regulations, HUD Handbooks or other HUD documentation remain in force, regardless of the method of transmission.

Implementation Checklist

The following checklist is provided as a guideline for the management of the EDI implementation. It can be customized, as required, to meet your unique requirements.

- ☐ Obtain management commitment — Involve all key managers and departments affected by the implementation.

- ☐ Distribute the most recent version of this document — CPD EDI Implementation Guide from: http://www.hud.gov/utilities/intercept.cfm?/offices/cpd/systems/idis/pdf/edi_impl.pdf or call the CPD Representative. Use the guide as a resource for technical and operational requirements as well as mapping instructions.

- ☐ Review internal systems and business procedures — Determine how EDI should be integrated into existing systems and business practices. (Do not limit your thinking to only CPD's program data. EDI can provide many other opportunities to improve your daily operations.)

- ☐ Establish a plan — Establish the overall direction and priorities. Include milestones and completion dates.

- ☐ Organize a project team and define responsibilities — Assign responsibilities for each task.

- ☐ Obtain appropriate reference materials — Reference materials should include modem manuals, VAN service and support guides as well as EDI software manuals.

- ☐ Conduct communication and hardware inventory — Evaluate existing communication needs and capabilities to determine preferred method of communication and communication services.

- ☐ Develop an overall design — The EDI design should include a narrative, system data flow diagram, functional analysis, input/output requirements, control back-up/restart specifications, program description, and operational, audit and security procedures.

- ☐ Select the communication vehicle and VAN — Finalize any optional services and costs.

- ☐ Select translation/mapping software — Factors to consider include: configuration of current system, resource availability, ability to handle multiple X12 standards, implementation timetable, vendor experience, education, and customer support services.

- ☐ Implement translation/mapping software — Use vendor support services to implement translation software.

- ☐ Complete the EDI Information Request Form and return to CPD per the form's directions.

- ☐ Conduct system test with translation software and communication hardware/software — Generate document, translate, send transmission, and verify receipt.

- ☐ Conduct stand-alone testing — Ensure the X12 generated data is correct before conducting simulated and limited pilot testing with HUD.

- ☐ Conduct simulated and pilot testing with CPD — Obtain prior approval for testing with the EDI team.

- ☐ CPD will establish production procedures and schedule — Ready your environment for the production cut-over date.

- ☐ Provide training — Provide both EDI management and operational classes to appropriate staff members.

- ☐ Implement — Begin sending program data.

- ☐ Re-evaluate checklist for future implementations — Eliminate unnecessary tasks and simplify processes.

Implementation Time Schedule.

The key to successful implementation is the Implementation Plan. It is assumed that in general the implementation process will take approximately 30 to 90 days depending upon the complexity of the business process being migrated to EDI. Your Implementation Plan should describe the implementation process, user support, and operations activities as well as a time-frame for accomplishing the EDI implementation tasks. It should also identify who will accomplish the various tasks and other resource requirements. The following activities should be addressed:

- ➢ Overall planning and coordination for the implementation and preparation of the implementation procedures;

- ➢ Technical assistance requirements;

- ➢ Training activities associated with the implementation;

- ➢ Prerequisites for successful implementation, including reference materials and support contacts;

- Personnel required;
- Computer and software support;
- Operational support requirements; and
- Priority scheduling.

Set-Up Instructions

The following chart summarizes the steps you should take to set up your EDI capability.

	SET-UP CHECKLIST
1.	Review your HUD EDI Implementation Guide (Sections I, II, III and V), which provide a complete overview of the set-up phases of EDI and how EDI works at HUD.
2.	Prepare an implementation plan describing how EDI will work in your organization.
3.	Ensure that the EDI Information Request Form has been completed and returned to HUD.
4.	Arrange for value-added network (VAN) service.
5.	Acquire the hardware and software that will enable the grantee to connect to your VAN and transmit data via EDI. The software will typically include a mapper and a translator as one complete package.
6.	Program your mapping and translation software.
7.	Review your internal workflow, and system's configurations - re-engineer, as appropriate. Identify and plan any required staff training.
8.	Establish trading partnerships.
9.	Contact CPD's Representative often and review the progress of your EDI implementation activities. Detailed instructions for testing with CPD and a testing schedule will then be provided by the CPD Representative.

Valid HUD Segment Terminators

These are the only valid HUD Segment Terminators that may be used in all of the HUD Transaction Sets.

CHARACTER	DESCRIPTION	HEX CODE
BEL	BELL	07
HT	HORIZONTAL TAB	09
VT	VERTICAL TAB	0B
FF	FORM FEED	0C
NL	NEW LINE	0D
FS	FILE SEPARATOR	1C
GS	GROUP SEPARATOR	1D
RS	RECORD SEPARATOR	1E
US	UNIT SEPARATOR	1F
!	EXCLAMATION POINT	21
"	DOUBLE QUOTE	22
#	SHARP	23
$	DOLLAR SIGN	24
%	PERCENT	25
&	AMPERSAND	26
'	APOSTROPHE	27
+	PLUS SIGN	2B
,	COMMA	2C
:	COLON	3A
;	SEMICOLON	3B
<	LESS THAN SIGN	3C
=	EQUAL	3D
>	GREATER THAN SIGN	3E
?	QUESTION MARK	3F
@	AT SIGN	40
[	LEFT BRACKET	5B
\	BACK SLASH	5C
]	RIGHT BRACKET	5D

CHARACTER	DESCRIPTION	HEX CODE
_	UNDERLINE	5F
{	LEFT BRACE	7B
3	VERTICAL BAR	7C
}	RIGHT BRACE	7D

EDI INFORMATION REQUEST

(Read definitions and instructions on reverse side before completing form)

Check the appropriate grantee application(s):

__CPD / IDIS __Other EDI

Type or Print

Grantee Name _____

Unit of Government Code & Number _____

EDI Contact Name _____

Telephone Number (_____)_____ FAX (_____)_____

Mailing Address: _____

_____

E-mail Address:_____ _____@_____

Complete this section if using a Service Bureau to send and receive EDI transactions:

Service Bureau Name: _____

Contact Name: _____

Address: _____

_____

Telephone Number (_____)_____ FAX (_____)_____

Complete this section if you are using a Value Added Network (VAN) to send and receive EDI transactions:

Note: The Unit Of Government (UOG) Code and Number is the eleven digit number assigned to your organization by HUD.

VAN's Name: _____

Complete these sections:[1]

INBOUND TO HUD VAN

TS Type	ISA Grantee Sender Qualifier ID	ISA Grantee Sender Interchange ID	HUD Grantee GS02	ISA HUD Receiver Qualifier ID	ISA HUD Receiver Qualifier ID	Grantee VAN/ Service Bureau
864 Text Message	ZZ			ZZ	9999609999	

OUTBOUND FROM HUD VAN

TS Type	ISA HUD Sender Qualifier ID	ISA HUD Sender Interchange ID	ISA Grantee Receiver Qualifier ID	ISA Grantee Receiver Interchange ID	Grantee VAN/ Service Bureau
Functional Acknowledgment	ZZ	9999609999	ZZ		
864 Text Message	ZZ	9999609999	ZZ		

[1] These values should reflect your UOG Code + UOG Number.

Return this form via e-mail to: edi_help_desk@hud.gov

Or, via mail to: Dept. of HUD EDI HELP DESK
Attn: James Legge, Room 2262
451 Seventh Street, SW
Washington, DC 20410

Or, FAX to: EDI Help Desk (301) 731-1384

Business Questions? E-Mail James Legge: james_h._legge@hud.gov
Technical Questions? E-Mail edi_help_desk@hud.gov or call HUD EDI Help Desk at 1-800-483-4334

EDI INFORMATION REQUEST FORM INSTRUCTIONS

Please read these instructions carefully before completing this form.

Your organization needs to establish a way to create EDI transactions and connect to HUD's EDI gateway. This will involve acquiring the services of a third party carrier, i.e., a Value Added Network (VAN) or service bureau. To communicate between your service provider and HUD IDIS VAN, we need some grantee information to complete the VAN to VAN connection. Please complete the information on the EDI Information Request form. Complete one form for the service provider that you plan to use.

First, place an "X" in the space provided to indicate that this is the CPD/IDIS program if it applies to your organization. Second, enter the appropriate information in the grantee's name box. Third, enter data on the "Grantee Name" line, the Unit of Government Code (UOG) and Number line. Fourth, enter the EDI Contact's name, telephone and FAX number, mailing address, and Internet address on the proper lines.

Next, enter your service bureau's information in the service bureau box. Enter your service bureau's name, contact name, address, and contact's telephone and FAX number and Internet address. If you do not use a service bureau, skip this box and enter your VAN's name in the "VAN's Name" box.

The form provides CPD's ISA, GS02, and VAN information. Grantees need to enter their ISA, GS02 and VAN or service bureau information. Refer to the "TS Type" box for this information.

When you have completed this form, send it to the address on the bottom of the EDI INFORMATION REQUEST form. A HUD/CPD representative will contact each grantee authorizing them to start sending EDI data to HUD. If you need additional assistance, please call the HUD EDI Help Desk at 1-800-483-4334.

This form is for Production purposes only. If you wish to test via EDI, please contact the **CPD EDI Coordinator, Ken Nelson** at (202) 708-0614 x4578 to establish testing procedures.

APPENDIX A

Internet Access

The U.S. Department of Housing and Urban Development provides valuable information on a World Wide Web home page about doing business with HUD. The EDI Implementation Guide is one of the items available on the web for those Trading Partners having access to the Internet. Portions of the EDI Implementation Guide may be viewed and printed. The files for downloading are Adobe Acrobat PDFs.

Trading Partners are encouraged to use the Internet as the EDI Implementation Guide may be updated frequently, or as often as required, on the HUD web site. The HUD web site may be accessed at http://www.hud.gov.

You may go directly to the IDIS EDI web page at:
https://www.hudexchange.info/idis/electronic-data-interchange.

You may go directly to the EDI Implementation Guide at:
https://www.hudexchange.info/resource/2421/electronic-data-interchange-implementation-guide.

APPENDIX B

Basic Trading Partner Agreement

APPENDIX B

Basic Trading Partner Agreement

1.0 INTRODUCTION

This agreement between HUD and the mortgagee, hereafter known as Trading Partner, prescribes the general procedures and policies to be followed when Electronic Data Interchange (EDI) is used for transmitting and receiving electronic documents in lieu of one or more paper documents normally associated with conducting business with HUD.

1.1 DEFINITIONS

• Trading Partner — the HUD-approved lender (identifiable by the HUD-issued 10-digit ID number) who consents to the electronic exchange of pertinent business documents in accordance with all specifications of the agreement.

• HUD Value Added Network (VAN) — the data network service used by HUD for the receipt and transmission of electronic business documents with the Trading Partner under the terms of this agreement.

• Trading Partner Value Added Network (VAN) — the data network service used by the Trading Partner for the receipt and transmission of electronic business documents with HUD under the terms of this agreement.

• HUD VAN Mailbox — the repository within the HUD VAN which contains electronic business documents submitted by HUD's Trading Partner.

• Trading Partner VAN Mailbox — the repository within the Trading Partner's VAN which contains electronic business documents transmitted by HUD.

• HUD's Gateway Processor — the HUD-owned computer which receives electronic business documents from the VAN or point-to-point communications system for subsequent processing by the appropriate HUD computer application program.

• HUD EDI Implementation Guide — a HUD-provided manual which describes the electronic submission of business documents to HUD, as an aid to the Trading Partner in achieving the information interchange specified in this agreement.

• Service Bureau — an agent of the Trading Partner authorized by the Trading Partner to submit business documents electronically to HUD. The Trading Partner must specify this relationship in a completed EDI Information Request Form.

• HUD Business Day — A HUD business day is a day in which HUD is officially open for normal business at its Washington, DC headquarters office.

• Transaction Set — A transaction set is the data that is exchanged electronically in order to convey meaning between parties engaged in EDI, consisting of a specific group of segments that represent a business document. The business information included in a transaction set is equivalent to the information in a conventionally printed document.

2.0 PURPOSE

The agreement ensures that EDI transmissions between HUD and the Trading Partner will be treated as equivalent to paper-based transmissions of data. It ensures that the use of any electronic equivalent of the standard HUD

business document(s) referenced in the addenda to this agreement will be deemed an acceptable business practice and that the Trading Partner will not challenge the admissibility of the electronic information in evidence, except in circumstances in which an analogous paper document could be challenged.

3.0 TERMS AND CONDITIONS

Communications between HUD and its electronic Trading Partner will occur via a VAN. Each participant, i.e., HUD and the Trading Partner, will maintain a mailbox with its respective VAN for the receipt of electronic documents created and transmitted in a standard format.

3.1 The standards for business documents shall be in accordance with the American National Standards Institute (ANSI) Accredited Standards Committee (ASC) X12 specifications and represent the most current version of those standards in use at HUD, as specified in this Trading Partner Agreement and its addenda. Any changes to the ASC X12 standard HUD intends to employ with its Trading Partner will be subject to the provisions stated in Paragraphs 6.0 and 9.0.

3.2 Trading Partner must deliver transactions destined for HUD to the HUD EDI address designated in the EDI Information Request Form.

3.4 All electronic documents transmitted to HUD will be considered "postmarked" at the time of delivery to the HUD VAN mailbox. Electronic documents will be considered delivered at the time of receipt by HUD's EDI gateway processor.

3.5 All transactions received by either party in an electronic exchange will be acknowledged by returning the sender an X12 Functional Acknowledgment, Transaction Set (TS) 997. A copy of TS 997 and related documentation are presented in this Implementation Guide. In response to an incoming business document, HUD will send a functional acknowledgment no later than the close of business of the next HUD business day following its delivery to the HUD VAN mailbox ("postmark").

3.6 HUD will bear the cost of placing business documents and acknowledgments in the Trading Partner's electronic mailbox, and receiving the documents and acknowledgments placed in its VAN mailbox. The Trading Partner is responsible for all costs associated with receiving documents and acknowledgments from the Trading Partner's electronic mailbox and transmitting transactions to HUD's VAN mailbox.

3.7 Trading Partner will be able to submit or exchange electronic business documents any time during the normal operating hours of HUD's VAN.

3.8 If any errors occur in a transmission received by a Trading Partner, HUD will be responsible only for those errors occurring on the HUD system. If a Trading Partner receives a garbled transmission, HUD must be contacted immediately to arrange a retransmission. Procedures for error reporting are defined in the relevant part of the HUD EDI Implementation Guide for the business documents being exchanged.

3.9 HUD will not be responsible for any damages incurred by the Trading Partner as a result of missing or delayed transmissions, when the problem is not with or caused by HUD or its VAN provider.

3.10 Each EDI business process to be implemented with the Trading Partner will undergo a period of testing, of up to approximately one (1) month; and a period of evaluation of up to approximately two (2) months, during which documents must be sent to HUD Headquarters both electronically and by mail. This test and evaluation process will ensure the exchange of correct information with the Trading Partner.

3.11 Upon successful completion of this test and evaluation period, HUD will approve and notify the Trading Partner. The EDI Information Request Form will set dates for beginning official EDI transmissions and for removing the general requirement to mail hard copy documents or tapes to HUD.

3.12 Any document from HUD's system placed into a Trading Partner's VAN mailbox is to be considered a valid and authentic document backed by the same guarantees and legitimacy as are found in an equivalent paper

transaction. Likewise, any document from a Trading Partner placed into HUD's VAN mailbox will be considered a valid and authentic document backed by the same guarantees of legitimacy as are found in an equivalent paper transaction.

4.0 FORCE MAJEURE

None of the parties in this agreement will be liable for failure to properly conduct EDI in the event of war, accident, riot, fire, flood, epidemic, power outage, labor dispute, act of God, act of public enemy, malfunction or inappropriate design of hardware or software, or any other cause beyond such party's control. If, in HUD's judgment, standard business cannot be conducted by EDI, HUD will, at its discretion, return to paper- or tape-based systems, as appropriate, for processing the business documents described in this agreement and its addenda.

5.0 EFFECTIVE DATE

The terms and conditions set forth in this document become effective upon receipt by HUD of the completed EDI Information Request Form.

6.0 AGREEMENT REVIEW AND UPDATE

This agreement will be reviewed at least annually by HUD to make mutually agreeable changes, additions or deletions, as necessary.

6.1 Trading Partner will notify HUD's EDI Contact, identified below, in writing within 15 calendar days after any change of company name.

6.2 Trading Partner will notify HUD's EDI Contact in writing at least 30 calendar days in advance of any change in VAN or service bureau.

6.3 HUD will note changes, such as those described in 6.1 and 6.2, and will incorporate them into the Trading Partner Agreement at the annual review.

6.4 Trading Partner will alert HUD's EDI Contact within 10 calendar days if there is a change in the corporate charter which will necessitate a change in mortgagee number. The Trading Partner would then need to complete a new EDI Information Request Form with the new mortgagee number and name of the new organization.

6.5 HUD will notify Trading Partner in writing at least 60 days in advance of any change in the technical provisions of the addenda, that is: HUD's VAN, ID qualifier, EDI address, interchange envelope, control ID, document format, or document version. Such notification will supersede the technical provisions of the addenda in force until such time as the addenda are updated, as specified in Paragraph 6.1.

6.6 All notifications required under this agreement will be submitted in writing to:
U. S. Department of HUD, EDI Desk, PO Box 44131, Washington, DC 20026-4131

7.0 TERMINATION

This agreement may be terminated by either HUD or the Trading Partner, effective 30 days after receipt of written notice by either party. Termination notice will have no effect on transactions occurring prior to the effective date of termination.

8.0 USE OF A SERVICE BUREAU
If the Trading Partner uses a service bureau for delivery and receipt of business documents electronically, the Trading Partner's obligations under this

The identification of any service bureau relationship must be clearly documented in the EDI Information Request Form.

9.0 WHOLE AGREEMENT

This agreement, all addenda, attachments and the EDI Information Request Form constitute the entire agreement between the parties. In the event a court of competent jurisdiction negates any of the provisions of this agreement, the remainder of the agreement will remain in full force and effect.
9.1 HUD will prepare a new addendum for each new EDI-based business process it develops. A new EDI Information Form will be completed by the Trading Partner and appended to this agreement.

9.2 In any case where there is a conflict between this agreement and HUD's regulations, the regulations will control.

ADDENDUM A
TO THE
BASIC TRADING PARTNER AGREEMENT

1.0 PURPOSE:

This Addendum to the Basic Trading Agreement provides additional detail and addresses area(s) which are not applicable in the use of Electronic Data Interchange (EDI) by the Department of Housing and Urban Development's (HUD) Office of Community Planning and Development and the Trading Partner.

2.0 IMPLEMENTATION:

Trading Partner will electronically transmit American National Standards Institute Text Messages transaction set (TS) 864, in accordance with specifications provided in the attached Infrastructure Test Procedures. These specifications define what is included in a HUD specific implementation for the use of the TS 864 to update IDIS. It is agreed by both parties that the agreed upon format and version shall be the standard American National Standards Institute (ANSI) X12 3050 and will be the equivalent to the corresponding submission of manually keyed data into IDIS. HUD's Interchange Control Header, standards identifier, and version number are: ISA,U,00305.

3.0 TERMS AND CONDITIONS:

1. Since the test mailbox is the sole property of CPD, the approval of all trading partnerships will rest solely with CPD.
2. Acceptance of the Production Data **will not** be acknowledged but Non-IDIS compliant data will be reported directly to the Trading Partner using the TS 864. A TS 997 functional acknowledgment will only be returned during the test process.
3. This Addendum and the Basic Trading Partner Agreement constitute a complete agreement. No oral modifications or waivers shall be binding upon either party unless expressly noted by CPD.
4. No electronic signatures or security information other than the approved EDI Information Request form which contains mutually defined EDI addresses is required for subsequent electronic transmissions. Each party agrees that this will be sufficient to uniquely identify the originating and receiving party.
5. Each party, at its own expense, shall provide and maintain the equipment, software (if applicable), and databases necessary to ensure the integrity of all data transmitted.
6. Each party will reasonably limit access to software, databases and procedures sufficient to reasonably protect its data from unauthorized access.

4.0 EXCLUSIONS:

Items listed below modifies, replaces or voids specific references in the Basic Trading Partner Agreement. Unless noted below the specific reference will remain as written.

1.0 This agreement between HUD and the CPD designated Grantee, hereafter known as Trading Partner, prescribes the general procedures and policies to be followed when Electronic Data Interchange (EDI) is used for sending and receiving electronic data associated with conducting business with HUD.

3.3 HUD and the Grantee will exchange transactions via an interconnection or direct access through SPRINT's EDI VAN. Each will maintain their mailbox for the receipt of electronic documents created and transmitted in the pre-defined HUD format and use a mutually defined EDI address. During the test phase, HUD will use ZZ: HUDTEST as it's EDI address and the trading partner will use **ZZ:** as it's EDI qualifier and their **Unit of Government Code & Number** as it's I.D. number.

3.4 (no changes)

3.5 (no changes)

3.6 The Grantee would be solely responsible for complying with the terms and conditions of the VAN or Service Bureau they select and for any and all financial liabilities resulting from that separate agreement.

3.7 The Grantee will submit or exchange document only during the time period designed by CPD for their specific test. Once Production data is ready to be exchanged, then the Grantee may send data to their VAN 24 by 7 for processing by HUD.

3.8 During the test period, the Trading Partner will not receive inbound documents other than Functional Acknowledgments. IDIS application error messages will be provided by the CPD EDI Team to allow for prompt resolution.

3.9 HUD will not be responsible for any damages incurred by the GRANTEE as a result of delayed or invalid transmissions.

3.10 The test period shall be defined by HUD's CPD staff. The Grantee will be asked to transmit a minimum of six (6) and maximum of twenty-four (24) test 864 transactions.

3.11 The subsequent tests following the completion of the initial test period are the sole discretion of CPD.

3.12 The data transmitted to HUD does not replace any paper forms or documents and is used solely to update IDIS.

3.13 Not Applicable.

6.1 Not Applicable.

6.2 Not Applicable.

6.3 (no changes)

6.4 Not Applicable.

6.5 Not Applicable.

6.6 HUD reserves the right to change any technical provisions of the addenda or it's technical specifications at will.

9.2 Not Applicable.

All references to any contact other than the CPD liaison is not applicable.

EXECUTED BY:

_____	_____
(Grantee Representative)	(HUD/CPD Staff Representative)
_____	_____
(Printed Name & Title)	(Printed Name & Title)
_____	_____
(Approval Date)	(Approval Date)

Return this form via e-mail to: edi_help_desk@hud.gov

Or, via mail to: Dept. of HUD EDI HELP DESK
Attn: James Legge, Room 2262
451 Seventh Street, SW
Washington, DC 20410

Or, FAX to: EDI Help Desk (301) 731-1384

APPENDIX C

HUD Communications Envelope Specifications

Presented on the following pages are the data mapping guides for the Interchange Control segments and the functional group segments. These are used in every communications session. As stated in Section III, the interchange control segment provides information on you and your trading partners. The functional group segments provide information about each functional group.

APPENDIX D

Transaction Set 864

864 Text Message

Functional Group ID=TX

Introduction:

This Draft Standard for Trial Use contains the format and establishes the data content of the Text Message Transaction Set (864) for use within the context of an Electronic Data Interchange (EDI) environment. The transaction set can be used to provide users with a capability to electronically move messages, contracts, explanations, and other one-time communications. It is the intent of this transaction set to provide electronic communication (messages) for people, not for computer processing. The use of the transaction set to transmit quasi or unique transaction set standards is discouraged. The use of the Text Message transaction set demands of the sender certain detailed information about the recipient. The transaction set's purpose is to provide communication to the recipient in some human-readable form. The recipient's network will dictate what capabilities are available for delivery of the information. It is the responsibility of the sender to obtain this information and include it in the transmission.

Notes:

This convention provides the specification for grantee use of the 824 in the IDIS-EDI Pilot to provide project and activity updates to IDIS via EDI. It is not the specification for any other usage, such as IDIS reporting transaction status.

Both transaction set and interchange segment specifications are provided. Therefore, the table designations below do not correspond with the ANSI ASC X12 table designations for the 824 Transaction Set.

For the IDIS-EDI Pilot, an interchange (ISA-IEA) may contain only one group (GS-GE). The group may contain multiple transactions (ST-SE). Each transaction will accomplish a single action, e.g.: Create a project.

Interchange Level:

	Pos. No.	Seg. ID	Name	Req. Des.	Max.Use	Loop Repeat	Notes and Comments
Must Use	001	ISA	Interchange Control Header	M	1		
Must Use	002	GS	Functional Group Header	M	1		

Transaction Set Level, Heading:

	Pos. No.	Seg. ID	Name	Req. Des.	Max.Use	Loop Repeat	Notes and Comments
Must Use	010	ST	Transaction Set Header	M	1		
Must Use	020	BMG	Beginning Segment For Text Message	M	1		
Must Use	030	DTM	Date/Time Reference	O	1		
			LOOP ID - N1			200	
Must Use	040	N1	Name	O	1		
Not Used	050	N2	Additional Name Information	O	2		
Not Used	060	N3	Address Information	O	2		
Not Used	070	N4	Geographic Location	O	1		
Not Used	080	REF	Reference Numbers	O	12		
Must Use	090	PER	Administrative Communications Contact	O	3		

Detail:

	Pos. No.	Seg. ID	Name	Req. Des.	Max.Use	Loop Repeat	Notes and Comments
			LOOP ID - MIT			>1	
Must Use	010	MIT	Message Identification	M	1		
			LOOP ID - N1			200	
Not Used	020	N1	Name	O	1		
Not Used	030	N2	Additional Name Information	O	2		
Not Used	040	N3	Address Information	O	2		
Not Used	050	N4	Geographic Location	O	1		
Not Used	060	REF	Reference Numbers	O	12		
Not Used	070	PER	Administrative Communications Contact	O	3		
Must Use	080	MSG	Message Text	M	100000		

Summary:

	Pos. No.	Seg. ID	Name	Req. Des.	Max.Use	Loop Repeat	Notes and Comments
Must Use	010	SE	Transaction Set Trailer	M	1		

Interchange Trailers:

	Pos. No.	Seg. ID	Name	Req. Des.	Max.Use	Loop Repeat	Notes and Comments
Must Use	100	GE	Functional Group Trailer	M	1		
Must Use	110	IEA	Interchange Control Trailer	M	1		

Segment: **ISA** **Interchange Control Header**
Position: 001
Loop:
Level: Interchange
Usage: Mandatory
Max Use: 1
Purpose: To start and identify an interchange of zero or more functional groups and interchange-related control segments
Syntax Notes:
Semantic Notes:
Comments:

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
>>	**ISA01**	**I01**	**Authorization Information Qualifier** Code to identify the type of information in the Authorization Information 00 No Authorization Information Present (No Meaningful Information in I02)	**M ID 2/2**
>>	**ISA02**	**I02**	**Authorization Information** Information used for additional identification or authorization of the interchange sender or the data in the interchange; the type of information is set by the Authorization Information Qualifier (I01) ***Fill this field with blank characters.***	**M AN 10/10**
>>	**ISA03**	**I03**	**Security Information Qualifier** Code to identify the type of information in the Security Information 00 No Security Information Present (No Meaningful Information in I04)	**M ID 2/2**
>>	**ISA04**	**I04**	**Security Information** This is used for identifying the security information about the interchange sender or the data in the interchange; the type of information is set by the Security Information Qualifier (I03) ***Fill this field with blank characters.***	**M AN 10/10**
>>	**ISA05**	**I05**	**Interchange ID Qualifier** Qualifier to designate the system/method of code structure used to designate the sender or receiver ID element being qualified ZZ Mutually Defined	**M ID 2/2**
>>	**ISA06**	**I06**	**Interchange Sender ID** Identification code published by the sender for other parties to use as the receiver ID to route data to them; the sender always codes this value in the sender ID element ***1. Enter the identifier of the sender's translation point.*** ***2. Left justify and pad on the right with blanks.*** Unit of Government Code & Number	**M AN 15/15**
>>	**ISA07**	**I05**	**Interchange ID Qualifier** Qualifier to designate the system/method of code structure used to designate the sender or receiver ID element being qualified ZZ Mutually Defined	**M ID 2/2**
>>	**ISA08**	**I07**	**Interchange Receiver ID** Identification code published by the receiver of the data; When sending, it is used by the sender as their sending ID, thus other parties sending to them will use this as a receiving ID to route data to them ***1. Enter the identifier of the receiver's translation point.***	**M AN 15/15**

2. Left justify and pad on the right with blanks.
HUDTEST

>>	**ISA09**	**I08**	**Interchange Date** Date of the interchange ***1. Express the UTC (previously known as GMT) date that this interchange was created.*** ***2. Express the date in a six-position (YYMMDD) format.***	**M**	**DT 6/6**
>>	**ISA10**	**I09**	**Interchange Time** Time of the interchange ***1. Express the UTC (previously known as GMT) time that this interchange was created.*** ***2. Express the time in a four-position (HHMM) format.***	**M**	**TM 4/4**
>>	**ISA11**	**I10**	**Interchange Control Standards Identifier** Code to identify the agency responsible for the control standard used by the message that is enclosed by the interchange header and trailer Refer to 003050 Data Element Dictionary for acceptable code values.	**M**	**ID 1/1**
>>	**ISA12**	**I11**	**Interchange Control Version Number** This version number covers the interchange control segments 00305 Draft Standards for Trial Use Approved by ASC X12 PRB through Oct 1994	**M**	**ID 5/5**
>>	**ISA13**	**I12**	**Interchange Control Number** A control number assigned by the interchange sender ***Originating activities may use any numbering scheme consistent with their business practices. However, the scheme must uniquely identify each interchange over a very long period of time.***	**M**	**N0 9/9**
>>	**ISA14**	**I13**	**Acknowledgment Requested** Code sent by the sender to request an interchange acknowledgment (TA1) ***This request for acknowledgment applies only to return of a TA1, Interchange Acknowledgment. It does not apply to other acknowledgments (e.g. TA3 or transaction set 242). Since the TA1 is not supported by HUD, no acknowledgment shall be requested.*** 1 Acknowledgment Requested in Production use 0	**M**	**ID 1/1**
>>	**ISA15**	**I14**	**Test Indicator** Code to indicate whether data enclosed by this interchange envelope is test or production P Production Data ***Use to identify all data other than test data.*** T Test Data ***Use when testing interchanges.***	**M**	**ID 1/1**
>>	**ISA16**	**I15**	**Component Element Separator** This field provides the delimiter used to separate component data elements within a composite data structure; this value must be different than the data element separator and the segment terminator ***The value of this element dictates the value the translation software employs for component element separation throughout the interchange. Although this transaction does not employ Component Elements, a value must be provided. That value may not be used throughout the remainder of the interchange.***	**M**	**AN 1/1**

Segment: **GS** **Functional Group Header**
Position: 002
Loop:
Level: Interchange
Usage: Mandatory
Max Use: 1
Purpose: To indicate the beginning of a functional group and to provide control information
Syntax Notes:
Semantic Notes:
1 GS04 is the group date.
2 GS05 is the group time.
3 The data interchange control number GS06 in this header must be identical to the same data element in the associated functional group trailer, GE02.
Comments:
1 A functional group of related transaction sets, within the scope of X12 standards, consists of a collection of similar transaction sets enclosed by a functional group header and a functional group trailer.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
>>	**GS01**	**479**	**Functional Identifier Code** Code identifying a group of application related transaction sets TX Text Message	**M ID 2/2**
>>	**GS02**	**142**	**Application Sender's Code** Code identifying party sending transmission; codes agreed to by trading partners ***Enter the UOG Code and Number of the sending organization. UOG Codes are 6 characters long. UOG Numbers are 5 characters long. Therefore, the code that goes here is 11 characters long. E.G.: 55434000002. Where 554340 is the UOG Code and 00002 is the UOG Number.*** Unit of Government Code and Number	**M AN 2/15**
>>	**GS03**	**124**	**Application Receiver's Code** Code identifying party receiving transmission. Codes agreed to by trading partners ***Enter the address of the receiving organization.*** HUDTEST	**M AN 2/15**
>>	**GS04**	**373**	**Date** Date (YYMMDD) ***1. Enter the UTC (previously known as GMT) date that this segment was created.*** ***2. Express the date in a six-position (YYMMDD) format***	**M DT 6/6**
>>	**GS05**	**337**	**Time** Time expressed in 24-hour clock time as follows: HHMM, or HHMMSS, or HHMMSSD, or HHMMSSDD, where H = hours (00-23), M = minutes (00-59), S = integer seconds (00-59) and DD = decimal seconds; decimal seconds are expressed as follows: D = tenths (0-9) and DD = hundredths (00-99) ***1. Enter the UTC (previously known as GMT) time that this segment was created.*** ***2. Express the time in a four-position (HHMM) format.***	**M TM 4/8**
>>	**GS06**	**28**	**Group Control Number** Assigned number originated and maintained by the sender ***1. Originating activities may use any numbering scheme consistent with their business practices.***	**M N0 1/9**

2. The scheme must provide sufficient uniqueness to identify each functional group. The Group Control Number value, together with the Application Sender's and Receiver's Codes, shall be unique within an extended time frame - such as a year.

>>	**GS07**	**455**	**Responsible Agency Code**	**M**	**ID 1/2**

Code used in conjunction with Data Element 480 to identify the issuer of the standard

X	Accredited Standards Committee X12

>>	**GS08**	**480**	**Version / Release / Industry Identifier Code**	**M**	**AN 1/12**

Code indicating the version, release, sub-release, and industry identifier of the EDI standard being used, including the GS and GE segments; if code in DE455 in GS segment is X, then in DE 480 positions 1-3 are the version number; positions 4-6 are the release and sub-release, level of the version; and positions 7-12 are the industry or trade association identifiers (optionally assigned by user); if code in DE455 in GS segment is T, then other formats are allowed

003050	Draft Standards Approved for Publication by ASC X12 Procedures Review Board through October 1994

Segment: **ST** **Transaction Set Header**
Position: 010
Loop:
Level: Heading
Usage: Mandatory
Max Use: 1
Purpose: To indicate the start of a transaction set and to assign a control number
Syntax Notes:
Semantic Notes: **1** The transaction set identifier (ST01) used by the translation routines of the interchange partners to select the appropriate transaction set definition (e.g., 810 selects the Invoice Transaction Set).
Comments:

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
>>	**ST01**	**143**	**Transaction Set Identifier Code** Code uniquely identifying a Transaction Set 864 X12.864 Text Message	**M ID 3/3**
>>	**ST02**	**329**	**Transaction Set Control Number** Identifying control number that must be unique within the transaction set functional group assigned by the originator for a transaction set ***Use to transmit a unique number assigned by the originator of the transaction set. The number may be system generated. This same number will be cited in SE02.***	**M AN 4/9**

Segment: **BMG** **Beginning Segment For Text Message**
Position: 020
Loop:
Level: Heading
Usage: Mandatory
Max Use: 1
Purpose: To indicate the beginning of a Text Message Transaction Set
Syntax Notes:
Semantic Notes:
Comments: **1** BMG02 contains the message subject.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
>>	**BMG01**	**353**	**Transaction Set Purpose Code** Code identifying purpose of transaction set 00 Original ***Use to indicate that this transaction will send original project or activity to IDIS.*** ***Use to indicate that this transaction cancels (deletes) a previously created project or activity.*** 02 Replace/Change ***Use to indicate that this updates by total replacement project or activity information previously setup in IDIS.***	**M ID 2/2**
Not Used	**BMG02**	**352**	**Description** A free-form description to clarify the related data elements and their content	**O AN 1/80**
Not Used	**BMG03**	**640**	**Transaction Type Code** Code specifying the type of transaction	**O ID 2/2**

Segment: **DTM** **Date/Time Reference**
Position: 030
Loop:
Level: Heading
Usage: Optional (Must Use)
Max Use: 1
Purpose: To specify pertinent dates and times
Syntax Notes: **1** At least one of DTM02 DTM03 or DTM06 is required.
2 If either DTM06 or DTM07 is present, then the other is required.
Semantic Notes:
Comments:

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes	
>>	**DTM01**	**374**	**Date/Time Qualifier** Code specifying type of date or time, or both date and time 097 Transaction Creation ***Use to indicate the date the transaction set was created.***	**M**	**ID 3/3**
Not Used	**DTM02**	**373**	**Date** Date (YYMMDD)	**X**	**DT 6/6**
	DTM03	**337**	**Time** Time expressed in 24-hour clock time as follows: HHMM, or HHMMSS, or HHMMSSD, or HHMMSSDD, where H = hours (00-23), M = minutes (00-59), S = integer seconds (00-59) and DD = decimal seconds; decimal seconds are expressed as follows: D = tenths (0-9) and DD = hundredths (00-99) ***1. Cite the time that this transaction was created.*** ***2. Express the time in a four-position (HHMM) format.***	**X**	**TM 4/8**
	DTM04	**623**	**Time Code** Code identifying the time. In accordance with International Standards Organization standard 8601, time can be specified by a + or - and an indication in hours in relation to Universal Time Coordinate (UTC) time; since + is a restricted character, + and - are substituted by P and M in the codes that follow Refer to 003050 Data Element Dictionary for acceptable code values. ***1. Cite the grantee's time zone..*** ***2. Express the time in ET/CT/MT/PT.***	**X**	**ID 2/2**
Not Used	**DTM05**	**624**	**Century** The first two characters in the designation of the year (CCYY)	**O**	**N0 2/2**
	DTM06	**1250**	**Date Time Period Format Qualifier** Code indicating the date format, time format, or date and time format D8 Date Expressed in Format CCYYMMDD	**X**	**ID 2/3**
	DTM07	**1251**	**Date Time Period** Expression of a date, a time, or range of dates, times or dates and times ***1. Cite the date the transaction set was created.*** ***2. Express the date in a eight-position (CCYYMMDD) format.***	**X**	**AN 1/35**

Segment: **N1** **Name**
Position: 040
Loop: N1
Level: Heading
Usage: Optional (Must Use)
Max Use: 1
Purpose: To identify a party by type of organization, name, and code
Syntax Notes: **1** At least one of N102 or N103 is required.
2 If either N103 or N104 is present, then the other is required.
Semantic Notes:
Comments: **1** This segment, used alone, provides the most efficient method of providing organizational identification. To obtain this efficiency the "ID Code" (N104) must provide a key to the table maintained by the transaction processing party.
2 N105 and N106 further define the type of entity in N101.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes	
>>	**N101**	**98**	**Entity Identifier Code** Code identifying an organizational entity, a physical location, or an individual FR Message From	**M**	**ID 2/2**
Not Used	**N102**	**93**	**Name** Free-form name	**X**	**AN 1/35**
>>	**N103**	**66**	**Identification Code Qualifier** Code designating the system/method of code structure used for Identification Code (67) ZZ Mutually Defined ***Use to indicate UOG Code and Number.***	**X**	**ID 1/2**
>>	**N104**	**67**	**Identification Code** Code identifying a party or other code ***Enter the UOG Code and Number of the sending organization. UOG Codes are 6 characters long. UOG Numbers are 5 characters long. Therefore, the code that goes here is 11 characters long. E.G.: 55434000002. Where 554340 is the UOG Code and 00002 is the UOG Number.***	**X**	**AN 2/20**
Not Used	**N105**	**706**	**Entity Relationship Code** Code describing entity relationship Refer to 003050 Data Element Dictionary for acceptable code values.	**O**	**ID 2/2**
Not Used	**N106**	**98**	**Entity Identifier Code** Code identifying an organizational entity, a physical location, or an individual	**O**	**ID 2/2**

Segment: **PER** **Administrative Communications Contact**
Position: 090
Loop: N1
Level: Heading
Usage: Optional (Must Use)
Max Use: 3
Purpose: To identify a person or office to whom administrative communications should be directed
Syntax Notes: **1** If either PER03 or PER04 is present, then the other is required.
2 If either PER05 or PER06 is present, then the other is required.
3 If either PER07 or PER08 is present, then the other is required.
Semantic Notes:
Comments:
Notes: ***1. Use one iteration to indicate the name and communication numbers for an information point of contact at the location where the transaction set was originated and to whom EDI related issues may be addressed.***

2. Use another iteration to indicate the name and communication numbers for an information point of contact to whom IDIS data related issues may be addressed.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
>>	**PER01**	**366**	**Contact Function Code** Code identifying the major duty or responsibility of the person or group named EA EDI Coordinator ***Use to indicate the person to contact regarding EDI issues.*** SM Submitting Contact ***Use to indicate the person to contact regarding IDIS data issues.***	**M ID 2/2**
	PER02	**93**	**Name** Free-form name ***Cite last name first, followed by first name. If the whole name is longer than 35 characters, truncate or use initials for first name.***	**O AN 1/35**
	PER03	**365**	**Communication Number Qualifier** Code identifying the type of communication number EM Electronic Mail AP Alternate Phone FX Facsimile TE Telephone	**X ID 2/2**
	PER04	**364**	**Communication Number** Complete communications number including country or area code when applicable	**X AN 1/80**
	PER05	**365**	**Communication Number Qualifier** Code identifying the type of communication number EM Electronic Mail AP Alternate Phone FX Facsimile TE Telephone	**X ID 2/2**
	PER06	**364**	**Communication Number** Complete communications number including country or area code when applicable	**X AN 1/80**

	PER07	**365**	**Communication Number Qualifier** Code identifying the type of communication number EM Electronic Mail AP Alternate Phone FX Facsimile TE Telephone	**X**	**ID 2/2**
	PER08	**364**	**Communication Number** Complete communications number including country or area code when applicable	**X**	**AN 1/80**
Not Used	**PER09**	**443**	**Contact Inquiry Reference** Additional reference number or description to clarify a contact number	**O**	**AN 1/20**

Segment: **MIT** **Message Identification**
Position: 010
Loop: MIT
Level: Detail
Usage: Mandatory
Max Use: 1
Purpose: To identify the beginning of a specific message and to allow the identification of a subject for the message
Syntax Notes:
Semantic Notes: **1** MIT01 contains the message number.
2 MIT02 contains the message subject.
Comments: **1** MIT03 default is 80 characters.
2 MIT04 default is 66 lines.
Notes: ***The MIT loop may be used only once.***

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes	
>>	**MIT01**	**127**	**Reference Number** Reference number or identification number as defined for a particular Transaction Set, or as specified by the Reference Number Qualifier.	**M**	**AN 1/30**
	MIT02	**352**	**Description** A free-form description to clarify the related data elements and their content ***Enter IDIS Record Indicator***	**X**	**AN 1/80**
Not Used	**MIT03**	**931**	**Page Width** Definition of the maximum number of characters per line that can be expected in the message text	**O**	**N0 1/3**
Not Used	**MIT04**	**932**	**Page Length Lines** Definition of the maximum number of lines per page that can be expected in the message text	**O**	**N0 1/3**

Segment: **MSG** **Message Text**
Position: 080
Loop: MIT
Level: Detail
Usage: Mandatory
Max Use: 100000
Purpose: To provide a free form format that would allow the transmission of text information.
Syntax Notes:
Semantic Notes:
Comments: **1** MSG02 is not related to the specific characteristics of a printer, but identifies top of page, advance a line, etc.
Notes: ***1. The IDIS data will be carried within iterations of this segment. Each iteration will carry a Data Element Tag and Data Element value. .***

2. See the IDIS Record layout to this convention for specifications of the data required to be provided within the MSG segment.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes	
>>	**MSG01**	**933**	**Free-Form Message Text** Free-form message text	**M**	**AN 1/264**
Not Used	**MSG02**	**934**	**Printer Carriage Control Code** A field to be used for the control of the line feed of the receiving printer	**O**	**ID 2/2**

Segment: **SE** **Transaction Set Trailer**
Position: 010
Loop:
Level: Summary
Usage: Mandatory
Max Use: 1
Purpose: To indicate the end of the transaction set and provide the count of the transmitted segments (including the beginning (ST) and ending (SE) segments).
Syntax Notes:
Semantic Notes:
Comments: **1** SE is the last segment of each transaction set.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
>>	**SE01**	**96**	**Number of Included Segments** Total number of segments included in a transaction set including ST and SE segments	**M N0 1/10**
>>	**SE02**	**329**	**Transaction Set Control Number** Identifying control number that must be unique within the transaction set functional group assigned by the originator for a transaction set ***Cite the same number as the one in ST02.***	**M AN 4/9**

Segment: **GE** **Functional Group Trailer**
Position: 100
Loop:
Level: Interchange
Usage: Mandatory
Max Use: 1
Purpose: To indicate the end of a functional group and to provide control information
Syntax Notes:
Semantic Notes: **1** The data interchange control number GE02 in this trailer must be identical to the same data element in the associated Functional Header GS06.
Comments: **1** The use of identical data interchange control numbers in the associated functional group header and trailer is designed to maximize functional group integrity. The control number is the same as that used in the corresponding header.

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
>>	**GE01**	**97**	**Number of Transaction Sets Included** Total number of transaction sets included in the functional group or interchange (transmission) group terminated by the trailer containing this data element ***1. Use to identify the number of ST segments (transactions) within a functional group.*** ***2. Transmit the required number of characters without leading or trailing blanks.***	**M N0 1/6**
>>	**GE02**	**28**	**Group Control Number** Assigned number originated and maintained by the sender ***Cite the same group control number as was assigned by the originator in GS06.***	**M N0 1/9**

Segment: **IEA** **Interchange Control Trailer**
Position: 110
Loop:
Level: Interchange
Usage: Mandatory
Max Use: 1
Purpose: To define the end of an interchange of zero or more functional groups and interchange-related control segments
Syntax Notes:
Semantic Notes:
Comments:

Data Element Summary

	Ref. Des.	Data Element	Name	Attributes
>>	**IEA01**	**I16**	**Number of Included Functional Groups** A count of the number of functional groups included in an interchange ***1. Use to identify the number of GS segments (functional groups) within an interchange.*** ***2. For the IDIS Pilot, this will always be the number 1.***	**M N0 1/5**
>>	**IEA02**	**I12**	**Interchange Control Number** A control number assigned by the interchange sender ***Cite the same nine-digit interchange control number as was assigned by the originator in ISA13.***	**M N0 9/9**

997 Functional Acknowledgment

Functional Group ID=FA

Introduction:

This Draft Standard for Trial Use contains the format and establishes the data contents of the Functional Acknowledgment Transaction Set (997) for use within the context of an Electronic Data Interchange (EDI) environment. The transaction set can be used to define the control structures for a set of acknowledgments to indicate the results of the syntactical analysis of the electronically encoded documents. The encoded documents are the transaction sets, which are grouped in functional groups, used in defining transactions for business data interchange. This standard does not cover the semantic meaning of the information encoded in the transaction sets.

Notes:

1. Use this implementation convention to acknowledge receipt, and acceptance or rejection of a functional group and the transaction set(s) contained within it based upon EDI translation software syntax edits.

2. Trading partners should limit the scope of the data provided in the case of transaction set receipt and rejection notification to the transaction set level, i.e., the 1/AK3/040 loop should not be used. However, if separate arrangements with trading partners or flexibility within the translation software do not permit this level of response, the procedures identified herein, as applicable to the 1/AK3/040 loop should be followed.

Pos. Seg. Req. Loop Notes and No. ID Name Des. Max.Use Repeat Comments 010 ST Transaction Set Header M 1 n1
020 AK1 Functional Group Response Header M 1 n2
LOOP ID - AK2 999999
030 AK2 Transaction Set Response Header O 1 n3
LOOP ID - AK3 999999
040 AK3 Data Segment Note O 1 c1
050 AK4 Data Element Note O 99
060 AK5 Transaction Set Response Trailer M 1
070 AK9 Functional Group Response Trailer M 1
080 SE Transaction Set Trailer M 1

Transaction Set Notes

1. These acknowledgments shall not be acknowledged, thereby preventing an endless cycle of acknowledgments of acknowledgments. The Functional Group Header Segment (GS) is used to start the envelope for the Functional Acknowledgment Transaction Sets. In preparing the functional group of acknowledgments, the application sender's code and the application receiver's code, taken from the functional group being acknowledged, are exchanged; therefore, one acknowledgment functional group responds to only those functional groups from one application receiver's code to one application sender's code. There is only one Functional Acknowledgment Transaction Set per acknowledged functional group.
2. AK1 is used to respond to the functional group header and to start the acknowledgment for a functional group. There shall be one AK1 segment for the functional group that is being acknowledged.
3. AK2 is used to start the acknowledgment of a transaction set within the received functional group. The AK2 segments shall appear in the same order as the transaction sets in the functional group that has been received and is being acknowledged.

Record Type I07 **EDI_ACTIVITY_DESCRIPTION**
(ANSI X12 MSG Loop)

		MAPS TO:				
IDIS DATA ELEMENTS		POSITION	COLTYPE	LENGTH	IDIS DB2 TABLES	DATA FIELD
MIT01	**EDI_REFERENCE_NUMBER**	1	AN	30		Assigned by Grantee
MIT02	**EDI_RECORD_TYPE**	2	AN	3		Enter I07
MSG01	**EDIT_TRANSACTION_MODE**	1	NUMBER	2		Enter 01 or 02
MSG02	**EDI_TIMESTAMP**	2	TM	20		Enter Time Stamp
MSG03	**UOG_CD**	3	NUMBER	6	C04PT_ACT_TXT	Enter UOG Code
MSG04	**UOG_NUM**	4	NUMBER	5	C04PT_ACT_TXT	Enter UOG Num
MSG05	**IDIS_ACT_ID**	5	NUMBER	12	C04PT_ACT_TXT	Assigned by Grantee
MSG06	ACCOMP_CD	6	CHAR	2	C04PT_ACT_TXT	Assigned by Grantee
MSG07	PROP_NUM_ACCOMP	7	NUMBER	9	'C04PT_ACT	See Choices
MSG08	ACTUAL_NUM_ACCOMP	8	NUMBER	9	'C04PT_ACT	See Choices
MSG09	PROP_ACCOMP_CD	9	CHAR	2	'C04PT_ACT	See Choices
MSG10	TEXT	10	TEXT	420	C04PT_ACT_TXT	Enter DSC Text
MSG11	PGM_YR	11	NUMBER	4	'C04PT_ACT	Enter PRGM Year
			Total:	528		

REFERENCES

FIPS PUB 161-2, *Electronic Data Interchange (EDI)*, National Institute of Standards and Technology, April 29, 1996.

ASC X12 American National Standards, Version 3, Subrelease 2 (003032), June 1993, DISA.

Strategic Plan for Electronic Data Interchange, HUD Office of the Assistant Secretary for Administration, September 1992.

GLOSSARY

This section of the Implementation Guide consists of a glossary of terms which may be encountered during a discussion of EDI. There are many terms that are unique to EDI and many terms, familiar in other fields, that have adopted a new meaning within the context of EDI. EDI jargon borrows heavily from other computer and communications based disciplines.

alpha character set — A character set that contains letters and may contain control and special characters *but* no numeric characters.

alphanumeric character set — A character set composed of letters and numeric characters and may contain control characters and special characters.

ANSI — American National Standards Institute: the organization set up to define, maintain, and coordinate standards in the United States. Data processing standards are supervised by committees which are named X followed by a number as an identifier; e.g., ASC X9 is the banking data encryption committee.

application program — A computer program written to process a particular function within a business; e.g., mortgage processing.

ASC X12 — Accredited Standards Committee X12, part of the ANSI organization.

ASCII — American Standard Code for Information Interchange. A standard binary notation for numbers, letters, and control characters. ASCII is the basic communication method of computing.

asynchronous — Transmission which is not related to a particular frequency; i.e., bits-per-second. A method of data transmission where each character sent is framed by a start-stop signal. Characteristically used in slow-speed devices like teleprinters. Also, generally used by microcomputers (PCs).

baud — A rate of transmission over a channel or circuit. The number of pulses which can be transmitted in a second is the baud rate. Thus, baud translates as *pulses per second* or *bits per second*. However, not every pulse measured represents data.

bisynchronous — A communication protocol that moves information in blocks of characters. It is used for high-speed continuous transmission. Sending and receiving devices are controlled by clock pulses which regulate the rate and timing of data flow. Bisync is a character-oriented means of transmission.

CCITT — Consultative Committee on International Telegraph and Telephone. A committee within the International Telecommunications Union (ITU) that concerns itself with the conventions which enable incompatible networks and

computer systems to exchange data. CCITT operates within the broader standard issues established by the International Standards Organization (ISO).

character — A standard representation of a symbol, letter, number, or special character. Represented in a computer as a *byte*.

character set — A finite set of characters that is considered complete for a given purpose.

codifying — The process of detailing a new standard.

communication session — Some amount of time established and agreed upon by communicating computers, during which data is exchanged or interconnection takes place. The more complex the network, the more sophisticated this task becomes.

communications protocol — Establishes the parameters of communications between two computers. Includes baud rate, type of transmission, and parity setting.

compliance checking — In processing messages or transaction sets within an EDI system, an essential part of the software logic is to ensure that all transmissions contain the minimum mandatory information demanded by the EDI standard being used. Compliance checking does not necessarily mean that the document is complete or fully accurate but it does ensure rejection and identification of missing data elements or syntax errors. Hence compliance checking is the comparison of information sent by an EDI user against EDI standards, and the reporting back of anomalies.

conditional — In EDI standards, it indicates that the presence of a data segment/element is at the discretion of the sending party; i.e., used as required or based on mutual agreement, or is dependent on the value and/or presence of another data element in the transmission.

configuration — The specific arrangement of processor, storage devices, communication devices, and features within a computer system. It also includes the operating system type.

confirmation — A formal notice from a mailbox system or EDI server that a transmission sent to a trading partner's mailbox has successfully reached its intended mailbox or has been retrieved by the addressee.

connectivity — The ability of a particular computer or network architecture to be connected to and integrated with incompatible systems. For example, OSI and X.400 standards address connectivity.

data — A representation of facts, concepts, or instructions in a formalized manner suitable for communication, interpretation, or processing by human beings or by automatic means.

data dictionary — A table of terms within a specific application which needs to have a precise meaning for all users of the system.

data element — The smallest unit in an EDI transmission that can convey data. A unit of data for which the identification, description, and value representation have been specified. A data element is analogous to a **field** in non-EDI terms.

data element attribute — A defined characteristic of a data element.

data element separator (delimiter) — A character used to indicate that a new element of data has started. The most common separator is the *****.

data element directory — A document that describes the attributes of all data elements within an EDI standard. The directory also includes a listing of identified, named, and described data element attributes, with specifications as to how the corresponding data element values shall be represented. It defines the data type, minimum and maximum length of the data, and, if appropriate, a list of acceptable values.

data element number — A unique reference number used to identify an element and make a cross-reference between elements.

data entry — The task of keying in data to a computer system from a source document.

data integrity — Condition of data in a whole, original, and uncorrupted form.

data mapping — A method by which information in one format is restructured to a different format.

data segment — A predefined and identified set of functionally related data elements that are identified by their sequential positions within the set. A segment starts with a segment tag and ends with a segment terminator. In non-EDI terms, a data segment is analogous to a **record**.

data segment directory — A document that provides the definitions and formats of the data segments used to create a transaction set.

data segment identifier — A unique code consisting of one or more alphanumeric characters appearing as the first data element of each data segment. The code indicates the purpose of each segment.

data segment requirement designator — A character that indicates the mandatory/conditional status of a data segment.

data segment terminator — A special character inserted in a data segment immediately following the last data element of the segment. The $^{N}/_{L}$ is the data segment terminator.

direct link — Communication between two trading partners where the message is transmitted, usually through a modem, directly from one computer to the other computer.

DISA — Data Interchange Standards Association. The secretariat for the ANSI ASC X12 committee.

download — Transfer of information from a mainframe computer to a microcomputer.

EDIplus — Easy access Data Interchange plus (EaDIplus). The Unisys EDI product that collects outgoing transactions from an application, performs data mapping, and delivers the files to another application. It is a mapping software application.

EBCDIC — Extended binary-coded-decimal interchange code. Used for computer storage and processing. An 8-bit code.

EDI — Electronic Data Interchange; the computer to computer exchange of standard business documentation in machine processable form.

EDIFACT — Electronic Document Interchange for Administration, Commerce, and Transportation; the ISO standards that will determine a unified international EDI standard.

EFT — Electronic funds transfer; the generic term for sending payment instructions over a computer network.

electronic envelope — A pair of data segments that designate a transaction set, a functional group, or an interchange.

electronic mailbox — A designated holding location for electronic messages. The mailbox can either be on the user's computer or, as is more common, on a third party network (VAN).

flat file — A data file in prescribed fixed-field format; e.g., ASCII or EBCDIC.

front end processor — The use of a microcomputer or minicomputer as a way to communicate with a mainframe computer. In EDI a front end processor would normally perform mapping, translation, and communication functions.

functional acknowledgment — An automatic response by the EDI server that a message, or batch of messages, has been received along with an indication of syntax errors.

functional group — A group of like transaction sets. Represents the transmission of a group of similar documents.

gateway — A point of interconnection: the open door between one electronic network and another. A gateway is the connection between two third party networks that allows messages from one to be communicated to the other.

header — Data at the front of an EDI message, inserted for initial recognition. The header contain a control number that must match the control number in the corresponding trailer.

hub — The pivotal center of a trading network.

IEA — Interchange control trailer; defines the end of an interchange of one or more functional groups and interchange-related control segments.

implementation — The activities involved in converting an idea into a working computer system. This includes everything from consultation to hardware installation, integration, and operation.

incompatible — Applied to systems that cannot communicate with each other because of dissimilar documents, files with different formats, or differing communication protocols.

integration — The process of adapting systems and standards in order to overcome incompatibilities.

interchange — An electronic exchange between two business partners. The interchange is indicated by an interchange control header and an interchange control trailer. It is comparable to an outer envelope in paper transmissions.

interchange envelope — An envelope that contains the interchange header and trailer segments, control number, and number of functional groups in the interchange. One interchange envelope is required for each transmission.

interface — A shared boundary; a recognized and definable crossover point between two systems.

interpret — The reverse of translate; to use translation software to exactly match a system to the input requirements of a receiving computer system within an EDI community.

ISA — Interchange control header; identifies the beginning of an interchange of one or more functional groups and interchange-related control segments.

ISO — International Standards Organization; an organization with the UN to which all national and other standards-setting bodies defer. Encompasses the Open System Interconnect (OSI) seven-layer model that enables all networks and computers to communicate freely.

loop — A group of segments that are collectively repeated in a serial fashion up to a specified maximum number of times.

machine processable format — Data in designated fields so that the data can be automatically processed by a computer without interpretation or re-keying.

mailbox — a repository for messages in an electronic mail system or EDI server. Only authorized transmissions are allowed on a mailbox. The EDI server authenticates each transmission before depositing it in the appropriate "pigeon-hole" of a mailbox.

mandatory — A statement that a data segment, data element, or component element must be used. Used in all translation processes.

mapping — Is the process of taking data from a company-specific format and fitting it to the EDI standard format (transaction set).

mapping software — Software that is designed to perform the mapping process. (See mapping definition.)

modem — A device that encodes information into an electronically transmittable form (Modulator) and restores it to the original analog form (DEModulator).

nested segment — A segment that directly relates to another segment in an identified and structured group of segments covering the requirements for a specific transmission.

NIST — U.S. National Institute of Standards and Technology.

node — An access point in a network.

optional data element/segment — Contains information that is not required by the standard but that could be included in the transaction at the discretion of the sender and receiver.

OSI — Open Systems Interconnection. (see ISO)

passthrough — Access of data to a network by traveling across another network via gateways.

protocol — The set of rules that define the way in which information can flow within a computer or communication system. A protocol comprises: syntax — commands and responses; semantics — the structured set of requests and actions permissible by each user; and timing — types of events and sequences.

reference designator — A unique alphanumeric indicator that specifies the position of a data element within a data segment.

security — A generic term used to describe the methods adopted to protect data from loss, corruption, and unauthorized access and retrieval. Methods used include passwords, ID numbers, authorization, verification of message/document

type/mailbox address, and verification of line ID.

segment directory — A listing of identified, named, described, and specified segments in a transaction set.

SNA — Systems Network Architecture; an IBM proprietary communication protocol.

standards — The rules which are established to enable incompatible computers and communication systems to exchange information and to enable document types to be exchanged.

synchronous — A clock-controlled method of data transmission for use in high-speed circuits or networks.

table-driven program — A program in which the factors, variables, and data to be used are looked up from a table or matrix, or held on a file or in memory.

TDCC — Transportation Data Coordinating Committee; an early 1960s standards-setting committee.

telecommunication — The use of a network for the transmission of voice, data, or image.

third party network — A service provider that serves as a clearinghouse for EDI messages. Will normally provide both mailbox and value added services such as translation of data from one format to another. Also known as a VAN.

trading partner — Any company or organization with whom another company (or organization) is doing business. EDI links trading partners electronically.

trailer — A segment that ends every envelope and provides a count of segments, transaction sets, or functional groups. The trailer contains a control number that must match the number contained in the header.

transaction set — In EDI standards, the name given to a complete trading document sent electronically. A transaction set is an EDI document.

translation software — Software used to take data from a vendor-specific flat file and into an EDI standard format.

upload — Transfer of data from a microcomputer to a mainframe.

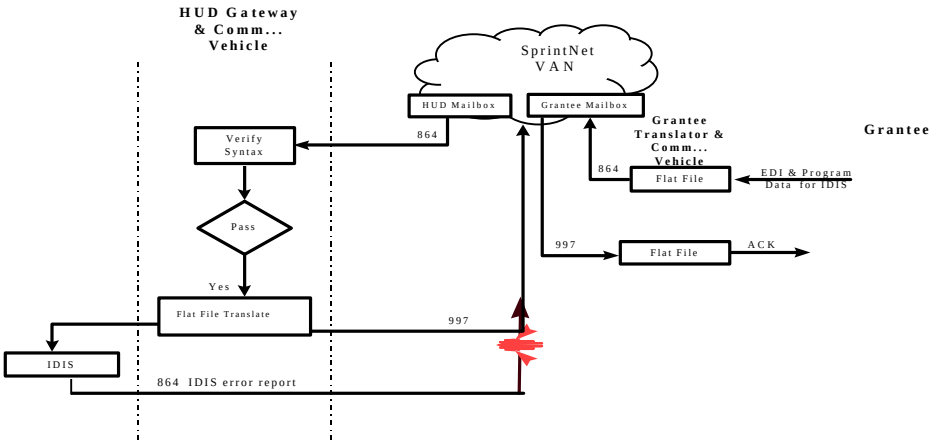
validation — The process of checking whether a document is the correct type for a particular EDI system and whether it comes from and is going to an authorized user.

value added network (VAN) — A third party network performing services beyond the transmission of data. For example, VANs provide translation, training,

and encryption services.

X.400 — An international standard for electronic messages in free format.

IDIS-EDI
FUNCTIONAL ARCHITECTURE



END_OF_DOCUMENT