
**Securities — Scheme for messages (Data
Field Dictionary) —**

Part 1:

Data field and message design rules and
guidelines

iTeh STANDARD PREVIEW

*Valeurs mobilières — Schéma des messages (Dictionnaire des champs
de données)*

*Partie 1: Règles de construction des champs de données et des messages
et guide d'utilisation:1999*

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 15022-1 was prepared by Technical Committee ISO/TC 68, *Banking, securities and other financial services*, Subcommittee SC 4, *Securities and related financial instruments*.

ISO 15022 cancels and replaces ISO/TR 7775:1997 and ISO 11521:1996.

ISO 15022 consists of the following parts, under the general title *Scheme for messages (Data Field Dictionary)*:

- *Part 1: Data field and message design rules and guidelines*
- *Part 2: Maintenance of the Data Field Dictionary and Catalogue of Messages*

Annex A of this part of ISO 15022 is for information only.

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Introduction

This part of ISO 15022 replaces ISO/TR 7775, *Securities — Scheme for message types* and ISO 11521, *Securities — Scheme for interdepository message types*. In the mid-1990s, it was felt strongly that the International Standards for communication between securities industry participants required an urgent review aiming at (1) reducing the time taken to deliver new message types to the market place and (2) improving “straight through processing” capabilities.

ISO 15022 sets the principles necessary to provide the different communities of users with the tools to design message types to support their specific information flows. These tools consist of:

- a set of syntax and message design rules;
- a dictionary of data fields; and
- a catalogue for present and future messages built by the industry with the above-mentioned fields and rules.

To address the evolving needs of the industry as they arise, the Data Field Dictionary and the Catalogue of Messages have been kept outside the standard. They are made available by a Registration Authority which updates them as necessary upon the request of industry participants.

To protect investments already made by the industry, the syntax proposed in this part of ISO 15022, referred to as the “Enhanced ISO 7775 syntax”, is based on the syntax used for the previous ISO 7775 and ISO 11521. However, to ensure the promotion, awareness and knowledge of the Electronic Data Interchange For Administration, Commerce and Transport (EDIFACT), a standard developed by the United Nations, adopted by ISO in 1988 as ISO 9735, and recommended as the International Standard for Electronic data interchange, ISO 15022 also supports the EDIFACT syntax. To recognize that a number of countries are currently or may in the future migrate to EDIFACT, the Registration Authority shall register EDIFACT fields and messages for use by securities industry participants. The ISO 15022 Data Field Dictionary shows how to format each data element required in securities messages in the Enhanced ISO 7775 syntax and in the EDIFACT syntax. Similarly, the Catalogue of Messages shows messages structured under both the Enhanced ISO 7775 and the EDIFACT message design rules and syntax.

ISO 15022 contains:

- the Enhanced ISO 7775 syntax and message design rules;
- the organization of the Data Field Dictionary and the Catalogue of Messages;
- the service levels and procedures for the Registration Authority, including its supervision by ISO.

The EDIFACT syntax referred to in this document is described in ISO 9735.

It is expected that this new flexible framework will allow industry groups to build messages in an international language and to migrate to EDIFACT if desired, at the speed which matches the urgency of their needs. If none of the messages recorded in the Catalogue of Messages addresses their requirements, they will be able to agree on the use of a new one and to design it from the approved fields in the Enhanced ISO 7775 and/or EDIFACT syntax. The Registration Authority will create extra fields as necessary and record the new message types and versions in the Catalogue of Messages to avoid the duplication of effort by other groups who have similar needs. The Registration Authority will ensure that the new fields and the new messages are available in both the Enhanced ISO 7775 and the EDIFACT formats, as required.

Straight through processing is expected to be enhanced because each community of users will be able to explicitly define its own business requirements and convert them into market specific message type versions. The approach differs from the generic international messages defined so far by ISO, which did not explicitly identify market specifics and therefore rendered the communication interfaces dependent on additional rules to be agreed bilaterally between senders and receivers.

Although the new framework permits multiple versions of the same message type, it is expected that market forces will naturally limit their creation to what is actually required until further convergence of market practices makes it possible to develop true international message standards for straight through processing. Similarly, it is expected that market forces will naturally organize the migration to EDIFACT at an appropriate pace. The dual structure of the Data Field Dictionary and Catalogue of Messages will facilitate the migration and the development of any required conversion mechanisms.

NOTE ISO 15022 has been designed to incorporate and be upwards compatible with the previous securities message standards ISO 775 and ISO 11521, as updated in ISO/TR 7775 . As a result, the initial Data Field Dictionary and Catalogue of Messages accommodate ISO/TR 7775 data fields and messages. However, some of the previous fields and messages are not fully compliant with the Enhanced ISO 7775 syntax, and none are compliant with EDIFACT. In addition, the initial Data Field Dictionary incorporates the Industry Standardization for Institutional Trade Communications (ISITC) DSTU 1/1995 and the Securities Standards Advisory Board (SSAB) data dictionaries.

A list of standards related to this part of ISO 15022 is given in the bibliography.

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Securities — Scheme for messages (Data Field Dictionary) —

Part 1:

Data field and message design rules and guidelines

1 Scope

This part of ISO 15022 consists of:

- the description of the Enhanced ISO 7775 syntax and message design rules;
- the contents and organization of the dictionary of Enhanced ISO 7775 and EDIFACT fields for securities messages; and
- the contents and organization of the catalogue of securities messages built in the Enhanced ISO 7775 and EDIFACT syntaxes.

It refers to the EDIFACT syntax when necessary to ensure an easy cross-reference between Enhanced ISO 7775 concepts and EDIFACT concepts. The EDIFACT syntax is not described in this part of ISO 15022; it is defined in ISO 9735 which is incorporated by reference.

This part of ISO 15022 is used for electronic data interchange between securities industry participants, independently of the communication network. Network dependent rules, for example, on how to specify where and when the message is to be sent, message acknowledgement and message protection are outside the scope of this part of ISO 15022.

The maintenance of this part of ISO 15022 is described in part 2 of ISO 15022.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 15022. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 15022 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO/IEC 646, *Information technology — ISO 7-bit coded character set for information interchange*.

ISO/IEC 8859-1, *Information technology — 8-bit single-byte coded graphic character sets — Part 1: Latin alphabet No. 1*.

ISO 9735 (all parts), *Electronic data interchange for administration, commerce and transport (EDIFACT) — Application level syntax rules*.

ISO/IEC 10646-1, *Information technology — Universal Multiple-Octet Coded Character Set (UCS) — Part 1: Architecture and Basic Multilingual Plane*.

Reference is also made to ISO/TR 7775, which refers to Technical Report (type 2) 7775. This document contains all message types included in ISO 7775 and ISO 11521, as updated and complemented by the ISO 7775 Maintenance Agency until September 1994.

3 Terms and definitions

For the purposes of this part of ISO 15022, the following terms and definitions apply.

3.1

block of data fields

predefined and identified set of functionally related data fields related to a business concept

NOTE A block of data fields is identified by a start of block and an end of block data field which both mention the block name, which qualifies the specific meaning of the block. The block of data fields may be repeating. A block of data fields may also include other, nested, blocks of data fields.

3.2

community of users

financial institutions sharing the same market practice and using the same message standards

3.3

component data element

simple data element which is a subordinate portion of a composite data element identified by its position within the composite data element

3.4

composite data element

data element containing two or more component data elements

3.5

data element

unit of data for which the identification, description and value representation have been specified

NOTE A data element in certain contexts is considered indivisible.

3.6

data element tag

<EDIFACT only> unique identifier for a data element in an EDIFACT data elements directory (see field tag)

3.7

data field

data field consists of a field tag followed by a data item

NOTE It is used to convey a simple data element or a composite data element which represents a unit of meaningful information.

3.8

data item

expression of a single data element or a composite data element represented in a specific format and identified by the preceding field tag

3.9

data source issuer code

string of characters used to identify the institution or market organization owning the data source scheme

3.10

data source issuer sub-code

identification of the specific data source scheme for the data source issuer

3.11

data source scheme

data source scheme consists of two sub-fields, the data source issuer code and the data source issuer sub-code, which are used in the data field tag to identify a proprietary scheme for the data item

3.12**discrete data field**

data field which expresses a specific single business data item

NOTE The field tag of a discrete data field does not need a qualifier to further define the business meaning of the data item.

3.13**field tag**

unique string of characters identifying the meaning, format, and value representation of the following data item (see data element tag)

NOTE A field tag is made up of a field type optionally followed by a qualifier and a data source scheme.

3.14**field type**

unique string of characters which starts the field tag and identifies the format and value representation of the data item

NOTE It also identifies either the meaning of the following data item (see discrete data field) or the class of the following data item (see generic data field).

3.15**generic data field**

data field used to express the data of a family or class of data items of the same nature, e.g. dates, amounts

NOTE The field tag of a generic data field contains a qualifier to specify the precise meaning of the following data item.

3.16**group of segments**

(EDIFACT only) identified, usually repeatable, grouping of segments

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3.17**message**

series of data fields and/or blocks of data fields communicated from one party to another to convey meaningful business information

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NOTE In EDIFACT, a set of segments in the order specified in an EDIFACT message directory starting with the message header and ending with the message trailer.

3.18**message code**

unique string of characters identifying the message type

3.19**message descriptor**

string of characters which specifies the scope of the message and the fields that may be used

NOTE A message descriptor is made up of a message code optionally followed by a version number and a message version sub-format.

3.20**message type**

identified and structured set of data items or data elements used to convey information related to a specific business scope

3.21**message version issuer code**

string of characters used to identify the institution or market segment owning the message version sub-format

3.22**message version issuer sub-code**

identification of the specific message version sub-format for the message version issuer

3.23**message version sub-format**

message version sub-format consists of two sub-fields, the message version issuer code and the message version issuer sub-code, which are used in the message descriptor to identify a proprietary sub-format

3.24**nested segment**

⟨EDIFACT only⟩ segment which directly relates to another segment in an identified and structured group of segments covering the requirements for a specific message type

3.25**qualified data element**

data element whose precise meaning is conveyed by an associated qualifier

3.26**qualified segment**

⟨EDIFACT only⟩ segment whose precise meaning is conveyed by an associated qualifier

3.27**qualifier**

data element whose value is expressed as a code that gives specific meaning to the function of another data element, data item, or segment

3.28**repeating segment**

⟨EDIFACT only⟩ segment which may repeat in a message as specified in the relevant message type specification

3.29**segment**

⟨EDIFACT only⟩ predefined and identified set of functionally related data element values

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NOTE A segment starts with a segment tag and ends with a segment terminator.

3.30**segment tag**

⟨EDIFACT only⟩ simple data element uniquely identifying a segment

3.31**separator**

character(s) used for the syntactical separation of data

3.32**sequence**

predefined set of data fields for documentation purposes only

3.33**simple data element**

data element containing a single value

3.34**sub-field**

subdivision or subordinate portion of a composite data element or of a field tag or of a message descriptor

3.35**version number**

allows different versions of the message type to be supported concurrently

4 Enhanced ISO 7775 Syntax and lexical format

4.1 Basic principles

Messages that are designed to comply with the Enhanced ISO 7775 standard and are part of the Catalogue of Messages, adhere to the following basic principles.

- Messages must be system and network independent.
- The scope of the message should not be dependent on the sender and/or receiver of the message.
- A field tag should uniquely identify the following data item, independently of the message type or the position of the data field in a message.

4.2 Character sets and lexical format

This part of ISO 15022 accommodates data fields that comply with the following character sets.

- ISO/IEC 8859-1 (Latin 1);

ISO/IEC 8859-1 consists of 191 graphic characters and supports all the characters used in Danish, Dutch, English, Faroese, Finnish, French, German, Icelandic, Irish, Italian, Norwegian, Portuguese, Spanish and Swedish.

- ISO/IEC 10646-1 [Universal Multiple-Octet Coded Character Set (UCS)]

This supports most non-Latin based languages;

- Binary.

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4.2.1 Specifying lexical format

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The format of a field and its constituents is documented in the following way.

Length restrictions	nn	minimum 1 character and maximum nn characters
	nn!	fixed number of characters
	nn-nn	range of characters
	nn*nn	maximum number of lines × maximum number of characters per line
Type of characters	n	digits
	d	digits with a decimal comma
	s	+ or - sign (if optional, no sign implies a positive value)
	h	upper case hexadecimals
	a	upper case letters
	c	upper case alphanumeric characters
	e	blank space
	y	upper case ISO 9735 characters (UNOA - Level A character set)
	z	ISO/IEC 8859-1 (Latin 1) characters
	u	ISO/IEC 10646-1 [Universal Multiple-Octet Coded Character Set (USC)]
	b	binary
"/"	character as-is, or	
"text"	text as-is	

Many of the data items in the Data Field Dictionary can accept lower case letters and other characters as well as upper case alphanumeric characters. They are of a data type z, i.e. they may consist of ISO/IEC 8859-1 (Latin 1) characters, which is the same as EDIFACT code list UNOC. Some networks do not support all these characters. Acceptable subsets of Latin 1 include:

- ISO/IEC 646 With US national option. This is a 7-bit character set. The printable codes from 32 to 127 are identical with Latin 1.
- ISO 9735 EDIFACT code list UNOA - Level A character set (existing code 'y'). This is also the International Telex Character Set.
- ISO 9735 EDIFACT code list UNOB - Level B character set. Upper and lower case letters.
- S.W.I.F.T. character set.
- Windows code page 1252 - Windows Latin 1 (ANSI) is in fact a superset of ISO/IEC 8859-1.

4.2.2 Separators

In addition to the character set used for defining data fields, control characters are required to syntactically separate:

- data fields within a message (field separator);
- field tag from data item (tag separator);
- sub-fields within a data item, field tag or message descriptor (sub-field separator).

Similarly, if it is required to include a control character within the text, it must be preceded by a release character to signify that it should be regarded as text. The release character itself should also be preceded by another release character if it is to be treated as text.

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The defined separators and release character are:

- Field separator CRLF (carriage return-line feed)
- Tag separator “:” (colon) (when not followed immediately by another “:”), or the second “/” after “::”
- Sub-field separator “/”, or “::” in a field tag
- Release character “?”

In addition, the end of a message is marked by a message delimiter. The format of a message delimiter is CRLF “-” (carriage return-line feed-minus sign).

For an example see 4.3.2.1.

4.2.3 Notation used

The following notation is used to describe the use of sub-fields, data fields, sequences of data fields or blocks of data fields. It is also used to describe the structure and use or format of data fields and messages.

The name of an item or a collection of items is often shown in “<...>” (the < and > characters do not form part of the message).

If a character or sub-field is optional within a field, it is shown in square brackets “[...]”. (The [and] characters do not form part of the message).

Alternative items, i.e. one item to be used out of a series of items, are shown by separating them by an or sign “[|]”. (The | character does not form part of the message.)