



DRAFT INTERNATIONAL STANDARD ISO/DIS 15022-1

ISO/TC 68/SC 4

Secretariat: **SNV**

Voting begins on
2002-11-28

Voting terminates on
2003-04-28

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Banking, securities and other financial services — Scheme for messages —

Part 1:

Overall methodology and format specifications for inputs and outputs to/from the ISO 15022 repository

[Revision of first edition (ISO 15022-1:1999) and its Corrigendum 1:1999]

Banque, valeurs mobilières et autres services financiers — Schéma des messages —

Partie 1: Méthodologie et spécifications de format globales pour les entrées et les sorties vers le/du dépôt ISO 15022

(standards.iteh.ai)

ICS 03.060

<https://standards.iteh.ai/catalog/standards/sist/67d96598-7399-4ca7-ad51-e81caa755977/iso-dis-15022-1>

In accordance with the provisions of Council Resolution 15/1993 this document is circulated in the English language only.

Conformément aux dispositions de la Résolution du Conseil 15/1993, ce document est distribué en version anglaise seulement.

To expedite distribution, this document is circulated as received from the committee secretariat. ISO Central Secretariat work of editing and text composition will be undertaken at publication stage.

Pour accélérer la distribution, le présent document est distribué tel qu'il est parvenu du secrétariat du comité. Le travail de rédaction et de composition de texte sera effectué au Secrétariat central de l'ISO au stade de publication.

THIS DOCUMENT IS A DRAFT CIRCULATED FOR COMMENT AND APPROVAL. IT IS THEREFORE SUBJECT TO CHANGE AND MAY NOT BE REFERRED TO AS AN INTERNATIONAL STANDARD UNTIL PUBLISHED AS SUCH.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNOLOGICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.

1	Contents	
2	1	Scope 1
3	2	References 1
4	3	Terms and definitions 1
5	4	Methodology for the development of ISO 15022 compliant Message Sets 6
6	4.1	Overview 6
7	4.2	Business Analysis 7
8	4.3	Requirements Analysis 7
9	4.4	Logical Analysis 8
10	4.5	Logical Design 8
11	4.6	Technical Design 9
12	4.7	Reverse Engineering 9
13	5	Repository Contents 10
14	5.1	ISO 15022 Repository Structure 10
15	5.2	Data Dictionary 12
16	5.2.1	Overview 12
17	5.2.2	List of Dictionary Items 13
18	5.2.2.1	Business Concepts 13
19	5.2.2.2	Data Types 13
20	5.2.2.3	Message Concepts 14
21	5.2.3	Dictionary Item Registration Status 14
22	5.2.4	Dictionary Items Description Information 14
23	5.2.5	Data Dictionary Life Cycle 15
24	5.2.6	Dictionary Item Release 15
25	5.3	Business Process Warehouse 16
26	5.3.1	Overview 16
27	5.3.2	List of Warehouse Items 16

28	5.3.3	Warehouse Item Registration status.....	17
29	5.3.4	Warehouse Item Description Information	17
30	5.3.5	Business Process Warehouse Releases.....	17
31	5.4	Character Sets, naming conventions, languages.....	18
32	6	Repository input	18
33	6.1	Submission Request Types.....	19
34	6.2	Submission Format.....	19
35	6.3	Submission Media	19
36	7	Repository Output.....	20
37	7.1	Repository Output Types.....	20
38	7.2	Output Format	20
39	8	Evolution of ISO 15022.....	20
40	8.1	Relation with ISO 15022, first edition	20
41	8.2	Relation with ISO 15022:1999 Message Set.....	21
42	8.3	Initial population of the ISO 15022 Repository	22
43	8.4	Future evolution of the ISO 15022 standard.....	22
44	8.4.1	The documents.....	22
45	8.4.2	The syntax.....	22
46			

47 **Foreword**

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

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

57 Technical Committee ISO/TC 68, *Banking, securities and other financial services*, Subcommittee SC 4,
58 *Securities and related financial instruments* prepared this second edition of ISO 15022. It aims at replacing the
59 first edition (1999).

60 The principles for the co-existence of the editions 1 and 2 during a temporary transitional period as well as the
61 principles for the migration from edition 1 to this edition 2 are outlined in Part 1 section 8 of this second edition.

62 The second edition of ISO 15022 consists of the following parts, under the general title *Scheme for messages*:

- 63 • Part 1: Overall Methodology and Format Specifications for Inputs and Outputs to/from the ISO 15022
64 Repository;
- 65 • Part 2: Role and Responsibilities of the Registration Bodies

66 <https://standards.iteh.ai/catalog/standards/sist/67d96598-7399-4ca7-ad51-e81caa755977/iso-dis-15022-1>

67 Introduction

68 In the mid-1990s, it was felt strongly that the international standard for communication¹ between securities
69 industry participants required an urgent review aiming at (1) reducing the time taken to deliver new standardized
70 Message Sets to the market place and (2) improving “straight through processing” capabilities.

71 The first edition of ISO 15022 set the principles necessary to provide the different communities of users with
72 the tools to design Message Definitions to support their specific information flows. These tools consisted of:

- 73 • a set of syntax and message design rules;
- 74 • a Data Field Dictionary uniquely identifying Business Elements to be communicated and their
75 technical representation; and
- 76 • a Catalogue of Messages built by the industry with the above-mentioned fields and rules.

77 To address the evolving needs of the industry as they emerge, the Data Field Dictionary and the Catalogue of
78 Messages had been kept outside the standard though maintained according to it. They were made available by
79 a Registration Authority, which updated them as necessary upon the request of industry participants.

80 The early 2000s saw the wide spread growth of IP (Internet Protocol) networking and the emergence of XML
81 (eXtensible Mark-up Language) as the “de facto” open technical standard for electronic communications. It was
82 felt that ISO 15022 needed to be extended to offer the whole financial industry a common platform for the
83 development of messages in a standardized XML syntax. At the same time, to shield the platform from further
84 syntax changes, it was felt necessary to better split messaging into its business dimension, on one hand, and
85 its technical representation, on the other hand. Therefore, while capitalizing on the original ISO 15022 tool set,
86 this second edition of ISO 15022 proposes: [ISO/DIS 15022-1](https://standards.iteh.ai/catalog/standards/sist/67d96598-7399-4ca7-ad51-702403597780/iso-dis-15022-1)

- 87 • to use a modelling methodology (e.g. based on formal notation such as UML --Unified Modelling
88 Language--) to capture, analyze and describe in a syntax-independent way the Business Processes,

¹ Even though ISO 15022 deals with the standardisation of the communication between financial industry players, it should be clear that this standard doesn't deal directly with any of the seven layers of the ISO Open Systems Interconnect model (OSI model). In fact, one could state that ISO 15022 starts where the OSI-model ends, i.e. ISO 15022 standardises the content of the “file” (i.e. the message content) that is transported in the OSI Application Layer.

The standardisation of the message content deals itself with two separate layers:

1. The “syntax layer” i.e. the standardisation of the physical representation of the information that is transported. This layer deals with aspects related to the use of XML, Enhanced 7775, EDIFACT or other syntaxes.
2. The “semantic layer”, i.e. the standardisation of the meaning of the information that is transported.

Whereas these layers were already covered in the first edition of ISO 15022, the second edition makes the standardisation of these layers more formal and makes the separation between both layers more explicit and complete. The introduction of this formal approach has a significant impact on the resulting standard but improves (1) the interoperability and convergence across existing Industry Message Sets, (2) the reusability across business domains and market practices and (3) the stability of the standardized Message Sets.

Another important factor in this second edition is the introduction of open syntaxes, such as XML, which removes the necessity to describe the technical specification of a particular syntax (such as Enhanced 7775 in the first edition).

89 Business Actors, Business Roles, Business Information and associated Message Definitions which
90 allow the industry to exchange the information required to achieve its business objectives;

- 91 • to define the design rules to be used to convert Message Definitions described in a modelling notation
92 into a standardized syntax representation. At the moment of the publication of this standard the
93 preferred syntax for all electronic documents (including the subset of electronic STP-messages) is
94 XML (as defined by the World Wide Web Consortium (W3C)). On request of the financial industry, the
95 design rules can later be extended to cover other future open syntaxes.

96 Under this approach, which is in line with the messaging developments undertaken by other industries, the
97 complete models and the derived syntax output are stored in a central Repository (the ISO 15022 Repository),
98 serviced by the Registration Authority. The ISO 15022 Repository offers industry participants access to:

- 99 • a financial Business Process Warehouse, containing:
 - 100 • the description of the financial Business Model;
 - 101 • the description of financial Business Processes, including Message Definitions;
 - 102 • the Message Schemes represented in an agreed syntax (such as ISO 15022 XML);
- 103 • a financial Data Dictionary, containing:
 - 104 • Business Concepts, Data Types and Message Concepts used in Business Processes and in
105 Message Definitions.

106 It is expected that this flexible framework will allow communities of users to build Message Sets according to
107 an internationally agreed approach and to migrate to the use of a common syntax (such as ISO 15022 XML). If
108 the existing set of Business Processes and Message Definitions stored in the ISO 15022 Repository does not
109 address their requirements, the communities of users can agree on the use of other Business Processes and
110 Message Definitions and design them from the items registered in the Data Dictionary. They can submit these
111 Business Processes and Message Definitions to the Registration Authority. The Registration Authority, with
112 the support of Standards Management Groups, will validate the requests and update the ISO 15022 Repository
113 as necessary and generate the corresponding ISO 15022 syntax output using the agreed ISO 15022 Syntax
114 Design Rules for XML or for other future open syntaxes.

115 Agreement of common financial Business Models and Message Definitions, which address the business
116 requirements of the communities of users and include a common syntax solution (such as ISO 15022 XML),
117 facilitates end-to-end straight through processing. Furthermore, the agreed Business Models and Message
118 Definitions serve as a reference to migrate to an agreed ISO 15022 syntax (such as ISO 15022 XML). Indeed,
119 communities using another syntax may link the content of their Industry Message Sets to items already
120 existing in the ISO 15022 Repository. The relation between these items could be provided to the communities
121 of users as "Convergence Documentation". It is expected that this new, dual split of business standard and
122 technical standard will facilitate the convergence and the development of any required conversion mechanisms.

123 ISO 15022 contains:

- 124 • the overall description of the modelling approach;
- 125 • the overall description of the ISO 15022 Repository contents;
- 126 • a high-level description of the input to be accepted by the Registration Authority to feed/modify the
127 Repository's Data Dictionary and Business Process Warehouse;
- 128 • a high-level description of the Repository output to be made publicly available by the Registration
129 Authority;
- 130 • the responsibilities, service levels and procedures for the Registration Bodies, including the role of
131 Standards Management Groups and the supervision by a Registration Management Group and ISO.

132 The ISO 15022 Registration Authority keeps the following supporting documents publicly available outside of
133 the standard:

134 a) ISO 15022 Modelling Guidelines

135 *This document provides a description of the method to be used to construct ISO 15022 compliant*
 136 *Message Sets.*

137 b) ISO 15022 Syntax Design Rules

138 *This document provides detailed specifications on the conversion rules applied by the ISO 15022*
 139 *Registration Authority to translate an ISO 15022 compliant Message Definition into an ISO 15022 syntax*
 140 *solution. The actual supporting document will specify a particular syntax (such as “ISO 15022 XML Design*
 141 *Rules” for the production of ISO 15022 XML Message Schemes and ISO 15022 XML Message instances).*

142 *Note: The Syntax Message Schemes published by the Registration Authority for the Message Definitions*
 143 *registered into the ISO15022 Business Process Warehouse constitutes the reference against which Syntax*
 144 *Message Schemes generated by proprietary implementations of the ISO 15022 syntax design rules can be*
 145 *compared in order to validate the compliance of those implementations with the design rules.*

146 c) Reverse Engineering for the ISO 15022 Repository

147 *This document provides guidelines on how to extract relevant information from existing Industry Message*
 148 *Sets in order to prepare the submission to the ISO 15022 Registration Authority of equivalent ISO 15022*
 149 *compliant Message Sets.*

150 d) Submission Templates to the Data Dictionary and Business Process Warehouse

151 *The set of templates to be used when submitting requests to the Registration Authority for inclusion into*
 152 *the ISO 15022 Repository.*

153 Those documents remain outside of the ISO 15022 standard since their contents might be subject to
 154 modification due to external standardization work in the modelling and syntax domain and improvement due to
 155 the acquired experience into the Repository population. Any significant modification(s) to those above listed
 156 documents shall require approval by the ISO 15022 Registration Management Group.

157 The initial ISO 15022 Repository will cover the business functionality of the ISO 15022:1999 Message Sets
 158 designed under ISO 15022:1999 and stored in the current Data Field Dictionary and Catalogue of Messages. It
 159 will also cover the business functionality of the FIX v4.3 Message Sets, designed by the FIX Protocol Limited.

160

161 **Banking, securities and other financial services — Scheme**
162 **for messages —**

163 **Part 1:**
164 **Overall methodology and format specifications for inputs and**
165 **outputs to/from the ISO 15022 repository**

166 **1 Scope**

167 This part of ISO 15022 consists of:

- 168 • the overall description of the modelling approach ;
169 • the overall description of the ISO 15022 Repository contents;
170 • a high-level description of the input to be accepted by the Registration Authority to feed/modify the
171 Repository's Data Dictionary and Business Process Warehouse;
172 • a high-level description of the Repository output to be made publicly available by the Registration
173 Authority;

174 ISO 15022 compliant Message Sets can be used for electronic data interchange amongst any industry
175 participants (financial and others), independently of any specific communication network. Network dependent
176 rules, like message acknowledgement and message protection are outside the scope of ISO 15022.

177 **2 References**

178 The following standards contain provisions which, through reference in the text, constitute provision of the ISO
179 15022 standard and its supporting documents. All standards are subject to revision, and parties to agreements
180 based on ISO 15022 are encouraged to investigate the possibility of applying the most recent editions of the
181 standards listed below. All mentioned versions are the versions that were valid at the time of publication of this
182 standard.

- 183 • UML (Unified Modelling Language), Version 1.4 – Object Management Group – <http://www.omg.org>
184 • XML (Extensible Markup Language) 1.0 (Second Edition) W3C Recommendation 6 October 2000 – World
185 Wide Web Consortium - <http://www.w3c.org>

186 **3 Terms and definitions²**

187 For the purposes of this part of ISO 15022, the following terms and definitions apply. Note that these terms and
188 definitions do not necessarily fully reflect the UML specific terminology.

² Note that Figures 5-1, 5-2 and 5-3 may be helpful for a better understanding of several terms in this section.

189 **Business Actor**

190 A physical business user (i.e. person, organisation or infrastructure), playing one or more Business Roles in a
191 particular Business Process.

192 Business Actors are a category of Business Concepts. They are stored in the Data Dictionary.

193 Example: Bank, Corporate

194 **Business Area**

195 A set of strongly related business activities, that provide a self-standing business value to a set of Business
196 Actors. A Business Area may contain other Business Areas (i.e. hierarchical structure). At the lowest level it
197 will contain a set of Business Processes.

198 Business Areas are stored in the Business Process Warehouse.

199 Example: Securities Pre-Trade, Payment Initiation

200 **Business Association**

201 A relation between two Business Components.

202 Business Associations are a category of Business Concepts. They are stored in the Data Dictionary where
203 they are linked to their two related Business Components. Their meaning can only be described
204 unambiguously in combination with these two Business Components.

205 Note that there can be several Business Associations between two particular Business Components.

206 Example: a Party services an Account

207 **Business Component**

208 A representation of a (part of a) key business notion and characterised by specific Business Elements.

209 Business Components are a category of Business Concepts. They are stored in the Data Dictionary.

210 Note that a Business Component may have one or more Business Associations with other Business
211 Components.

212 Example: Account, Trade, Party

213 **Business Concept**

214 Dictionary Item with a business meaning, i.e. Business Actor, Business Role, Business Component, Business
215 Element, Business Association or Rule (when defined in the scope of a Business Component).

216 **Business Element**

217 A business characteristic of a Business Component.

218 Business Elements are a category of Business Concepts. They are stored in the Data Dictionary where they
219 are linked to their owning Business Component. Their meaning can only be described unambiguously in
220 combination with this Business Component.

221 Example: Account Status, Deal Price, Trade Date and Time

222 **Business Information**

223 A generic name covering Business Components, Business Elements and Business Associations.

224 **Business Information Diagram**

225 A diagram that shows a set of Business Components, Business Elements and Business Associations.

226 **Business Model**

227 An abstract description of a (part of a) Business Area showing the main Business Processes and Business
228 Concepts relevant to this (part of a) Business Area.

229 **Business Process**

230 A main business activity within a Business Area that yields an observable result to one or more industry
231 participants and that allows the industry to achieve its business objectives. A Business Process may contain
232 other Business Processes (i.e. hierarchical structure).

233 Business Processes are stored in the Business Process Warehouse.

234 Example: Securities Ordering, Trade Matching

235 **Business Process Diagram**

236 A diagram that shows a set of Business Processes, Business Actors and Business Roles in a particular
237 Business Area.

238 **Business Process Warehouse**

239 The part of the ISO 15022 Repository that contains all Business Process related items (i.e. from the Business
240 Area down to the Message Definitions and their physical implementation).

241 **Business Role**

242 A functional role played by a Business Actor in a particular Business Process.

243 Business Roles are a category of Business Concepts and are stored in the Data Dictionary.

244 Example: Account Owner, Buyer

245 **Code**

246 One possible value in an exhaustive enumeration of all possible values of a Data Type assigned to a Business
247 or Message Element.

248 Codes are stored in the Data Dictionary where they are linked to their owning Data Type. Their meaning can
249 only be described unambiguously in combination with this Data Type.

250 Example: "INDI" is a possible value for the Data Type "Rate Status Code" and represents an indicative rate

251 **Convergence Documentation**

252 Documentation set showing relations between ISO 15022 Message Definitions, Message Components,
253 Message Elements, Business Components, Business Associations and/or Business Elements and items
254 defined in other Industry Message Sets (including the ISO 15022:1999 Message Set).

255 **Data Dictionary**

256 The part of the ISO 15022 Repository that contains all items that can be reused during business process
257 modelling and message definition activities. The Data Dictionary therefore contains Business Concepts,
258 Message Concepts and Data Types.

259 **Dictionary Item**

260 An item that is stored in the Data Dictionary.

261 **Data Type³**

262 A Data Type unambiguously specifies the set of valid values of a Business Element or of a Message Element.

263 The set of valid values may be defined via a format specification (e.g. text pattern) or via an exhaustive enumeration of all possible values (e.g. a list of Codes or a reference to a standardised coding scheme).

265 Data Types are stored in the Data Dictionary.

266 Example: BIC (Bank Identifier Code, ISO-9362)

267 **Data Type Representation⁴**

268 A Data Type Representation is a category of Data Types, characterised by a set of technical information required for implementation and processing.

270 The full list of valid Data Type Representations is registered in the ISO 15022 Data Dictionary.

271 Example: Code, Text, Amount, Identifier

272 **Diagram**

273 A graphical representation of information, complementing a textual description. It can be used during the development of ISO 15022 compliant Message Sets to clarify the meaning of specific information in the ISO 15022 Repository.

276 **Industry Message Set**

277 A Message Set that is defined and used by a representative part of the (Financial) Industry.

278 Example: the set of FIX v4.3 messages

279 **ISO 15022 compliant Message Set**

280 A Message Set that is constructed according to the rules defined in the second edition of ISO 15022.

281 **ISO 15022:1999 Message Set**

282 A Message Set that is constructed according to the rules defined in the first edition of ISO 15022 and that is stored in the ISO 15022 Catalogue of Messages.

284 **ISO 15022 Repository**

285 The repository that is composed of the Data Dictionary and of the Business Process Warehouse.

286 Note that the ISO 15022 Repository is NOT identical to the ISO 15022 Data Field Dictionary and Catalogue of Messages, as defined in ISO 15022:1999. As explained in Section 8, all information that is contained in the ISO 15022:1999 Data Field Dictionary and Catalogue of Messages will be transferred to this ISO 15022 Repository.

290 **Market Practice**

291 A set of Rules that are derived from specific (usually regional) business or regulatory agreements and common practices. A Message Definition covering a specific Message Functionality may differ slightly in function of the Market Practice. This means that there may be some variation in the structure and/or the set of Rules related to the Message Definition.

³ Note that this definition is semantically equivalent to the definition of “datatype of data element values” in ISO 11179 (“A set of distinct values for representing the data element value”). The definition has only been adapted to the particular terminology of the ISO 15022 standard.

⁴ Note that this definition is semantically equivalent to the definition of “representation” in ISO 11179 (“The combination of a value domain, datatype, and, if necessary, a unit of measure or a character set.”)