
**Financial services — UNiversal Financial
Industry message scheme —**

Part 1:

**Overall methodology and format
specifications for inputs to and outputs
from the ISO 20022 Repository**

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*Services financiers — Schéma universel de messages pour l'industrie
financière —*

*Partie 1: Méthodologie globale et spécifications pour le format de
soumission et de publication du Référentiel ISO 20022*

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Contents

Page

Foreword	iv
Introduction	v
1 Scope.....	1
2 Normative references	1
3 Terms and definitions	2
4 Methodology for the development of ISO 20022 compliant Business Transactions and Message Sets	10
4.1 Overview	10
4.2 Business Analysis	10
4.3 Requirements Analysis	11
4.4 Logical Analysis	11
4.5 Logical Design.....	12
4.6 Technical Design.....	12
4.7 Reverse Engineering	12
5 Repository contents	13
5.1 ISO 20022 Repository structure	13
5.2 Data Dictionary	14
5.2.1 Overview	14
5.2.2 List of Dictionary Items	14
5.2.3 Dictionary Item Registration Status	16
5.2.4 Dictionary Items Description Information	16
5.2.5 Data Dictionary life cycle.....	17
5.3 Business Process Catalogue.....	17
5.3.1 Overview	17
5.3.2 List of Catalogue Items.....	17
5.3.3 Catalogue Item Registration Status	18
5.3.4 Catalogue Item description information	18
5.3.5 Business Process Catalogue life cycle	18
5.4 Character sets, naming conventions, languages	19
6 Repository input.....	19
6.1 General	19
6.2 Submission request types	20
6.3 Submission format.....	20
6.4 Submission media	20
7 Repository output	20
7.1 General	20
7.2 Repository output types	21
7.3 Output format	21
8 Evolution of ISO 20022	21
8.1 Relation with ISO 15022.....	21
8.2 Future evolution of ISO 20022	22
8.2.1 The documents.....	22
8.2.2 The syntax.....	22
Bibliography	23

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 20022-1 was prepared by Technical Committee ISO/TC 68, *Financial services*.

ISO 20022 consists of the following parts, under the general title *Financial services — UNiversal Financial Industry message scheme*:

- *Part 1: Overall methodology and format specifications for inputs to and outputs from the ISO 20022 Repository*
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- *Part 2: Roles and responsibilities of the registration bodies*
- *Part 3: ISO 20022 modelling guidelines* [Technical Specification]
- *Part 4: ISO 20022 XML design rules* [Technical Specification]
- *Part 5: ISO 20022 reverse engineering* [Technical Specification]

Introduction

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

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

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

To address the evolving needs of the industry as they emerge, the Data Field Dictionary and the Catalogue of Messages had been kept outside ISO 15022 though maintained according to it. They were made available by a Registration Authority, which updated them as necessary upon the request of industry participants.

The early 2000s saw the widespread growth of IP (Internet Protocol) networking and the emergence of XML (eXtensible Mark-up Language) as the *de facto* open technical standard for electronic communications. It was felt that ISO 15022 needed to be extended to offer the whole financial industry a common platform for the development of messages in a standardized XML syntax. At the same time, to shield the platform from further syntax changes, it was felt necessary to better split messaging into its business dimension, on one hand, and its technical representation, on the other hand. Therefore, while capitalizing on the original ISO 15022 tool set, ISO 20022 proposes

- to use a modelling methodology (e.g. based on formal notation such as UML – Unified Modelling Language) to capture, analyse and describe in a syntax-independent way the Business Areas, Business Processes, Business Transactions, Business Actors, Business Roles, Business Information and associated Message Flow Diagrams and Message Definitions which allow the industry to exchange the information required to achieve its business objectives;
- to define the design rules to be used to convert Message Definitions described in a modelling notation into a standardized syntax representation. At the moment of the publication of ISO 20022 the preferred syntax for all electronic documents (including the subset of electronic STP-messages) is XML [as defined by the World Wide Web Consortium (W3C)]. On request of the financial industry, the design rules can later be extended to cover other future open syntaxes.

Under this approach, which is in line with the messaging developments undertaken by other industries, the complete models and the derived syntax output are stored in a central Repository (the ISO 20022 Repository), serviced by the Registration Authority. The ISO 20022 Repository offers industry participants access to the following.

- A financial Business Process Catalogue, containing
 - the description of the financial Business Model;
 - the description of financial Business Transactions, including Message Definitions;
 - the Message Schemes represented in an agreed syntax (such as ISO 20022 XML).

ISO 20022-1:2004(E)

- A financial Data Dictionary, containing
 - Business Concepts, Data Types and Message Concepts used in Business Areas, Business Processes, Business Transactions and Message Sets.

It is expected that this flexible framework will allow communities of users to build Business Transactions and Message Sets according to an internationally agreed approach and to migrate to the use of a common syntax (such as ISO 20022 XML). If the existing set of Business Transactions and Message Definitions stored in the ISO 20022 Repository does not address their requirements, the communities of users can agree on the use of other Business Transactions and Message Definitions and design them from the items registered in the Data Dictionary. They can submit these Business Transactions and Message Definitions to the Registration Authority. The Registration Authority, with the support of Standards Management Groups, will validate the requests and update the ISO 20022 Repository as necessary and generate the corresponding ISO 20022 syntax output using the agreed ISO 20022 Syntax Design Rules for XML or for other future open syntaxes.

Agreement of common financial Business Models and Message Definitions, which address the business requirements of the communities of users and include a common syntax solution (such as ISO 20022 XML), facilitates end-to-end straight through processing. Furthermore, the agreed Business Models and Message Definitions serve as a reference to migrate to an agreed ISO 20022 syntax (such as ISO 20022 XML). Indeed, communities using another syntax may link the content of their Industry Message Sets to items already existing in the ISO 20022 Repository. The relation between these items could be provided to the communities of users as “Convergence Documentation”. It is expected that this new, dual split of business standard and technical standard will facilitate the convergence and the development of any required conversion mechanisms.

ISO 20022 contains

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- the overall description of the modelling approach (Part 1);
- the overall description of the ISO 20022 Repository contents (Part 1);
- a high-level description of the input to be accepted by the Registration Authority to feed/modify the Repository’s Data Dictionary and Business Process Catalogue (Part 1);
- a high-level description of the Repository output to be made publicly available by the Registration Authority (Part 1);
- the responsibilities, service levels and procedures for the Registration Bodies, including the role of Standards Management Groups and the supervision by a Registration Management Group and ISO (Part 2);
- the detailed modelling guidelines to be used to construct ISO 20022 compliant Business Transactions and Message Sets (Part 3);
- the syntax design rules applied by the ISO 20022 Registration Authority to translate an ISO 20022 compliant Message Definition into an ISO 20022 syntax solution. The actual document shall specify a particular syntax such as “XML Design Rules” for the production of ISO 20022 XML Message Schemes and ISO 20022 XML Message instances (Part 4).

NOTE The Syntax Message Schemes published by the Registration Authority for the Message Definitions registered into the ISO 20022 Business Process Catalogue constitutes the reference against which Syntax Message Schemes generated by proprietary implementations of the ISO 20022 syntax design rules can be compared in order to validate the compliance of those implementations with the design rules.

- the reverse engineering guidelines explaining how to extract relevant information from existing Industry Message Sets in order to prepare the submission to the ISO 20022 Registration Authority of equivalent ISO 20022 compliant Business Transactions and Message Sets (Part 5).

The ISO 20022 Registration Authority keeps a set of Submission Templates to the Data Dictionary and Business Process Catalogue available outside of ISO 20022. These templates are to be used when submitting requests to the Registration Authority for inclusion into the ISO 20022 Repository.

NOTE Even though ISO 20022 deals with the standardization of the communication between financial industry players, it should be clear that it does not deal directly with any of the seven layers of the ISO Open Systems Interconnect model (OSI model). In fact, one could state that ISO 20022 starts where the OSI-model ends, i.e. ISO 20022 standardizes the content of the “file” (i.e. the message content) that is transported in the OSI Application Layer. The standardization of the message content deals itself with two separate layers: the “syntax layer”, i.e. the standardization of the physical representation of the information that is transported, which deals with aspects related to the use of XML, Enhanced 7775, EDIFACT or other syntaxes; and the “semantic layer”, i.e. the standardization of the meaning of the information that is transported. Although these layers were already covered in ISO 15022, ISO 20022 makes the standardization of these layers more formal and makes the separation between both layers more explicit and complete. The introduction of this formal approach improves (1) the interoperability and convergence across existing Industry Message Sets, (2) the re-usability across business domains and market practices and (3) the stability of the standardized Business Transactions and Message Sets. Another important factor in ISO 20022 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 ISO 15022).

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Financial services — UNiversal Financial Industry message scheme —

Part 1: Overall methodology and format specifications for inputs to and outputs from the ISO 20022 Repository

1 Scope

This part of ISO 20022 consists of

- the overall description of the modelling approach;
- the overall description of the ISO 20022 Repository contents;
- a high-level description of the input to be accepted by the Registration Authority to feed/modify the Repository's Data Dictionary and Business Process Catalogue;
- a high-level description of the Repository output to be made publicly available by the Registration Authority.

ISO 20022 compliant Business Transactions and Message Sets can be used for electronic data interchange amongst any industry participants (financial and others), independently of any specific communication network. Network dependent rules, like message acknowledgement and message protection are outside the scope of ISO 20022.

2 Normative references

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

ISO 15022-1:1999, *Securities — Scheme for messages (Data Field Dictionary) — Part 1: Data field and message design rules and guidelines*

ISO 15022-2:1999, *Securities — Scheme for messages (Data Field Dictionary) — Part 2: Maintenance of the Data Field Dictionary and Catalogue of Messages*

ISO 20022-2, *Financial services — UNiversal Financial Industry message scheme — Part 2: Roles and responsibilities of the registration bodies*

ISO 20022-5, *Financial services — UNiversal Financial Industry message scheme — Part 5: ISO 20022 Reverse engineering*

UML (Unified Modelling Language), Version 1.4 — Object Management Group

XML (Extensible Markup Language) 1.0 (Second Edition) W3C Recommendation 6 October 2000 — World Wide Web Consortium

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply. All these terms are capitalized when used throughout the document.

NOTE These terms and definitions do not necessarily fully reflect the UML specific terminology.

3.1 Business Actor
 physical business user playing one or more Business Roles in a particular Business Process or Business Transaction

EXAMPLE Bank, corporate.

NOTE 1 A Business Actor may be a person, organisation or infrastructure.

NOTE 2 Business Actors are a category of Business Concepts. They are stored in the Data Dictionary.

See Figure 1.

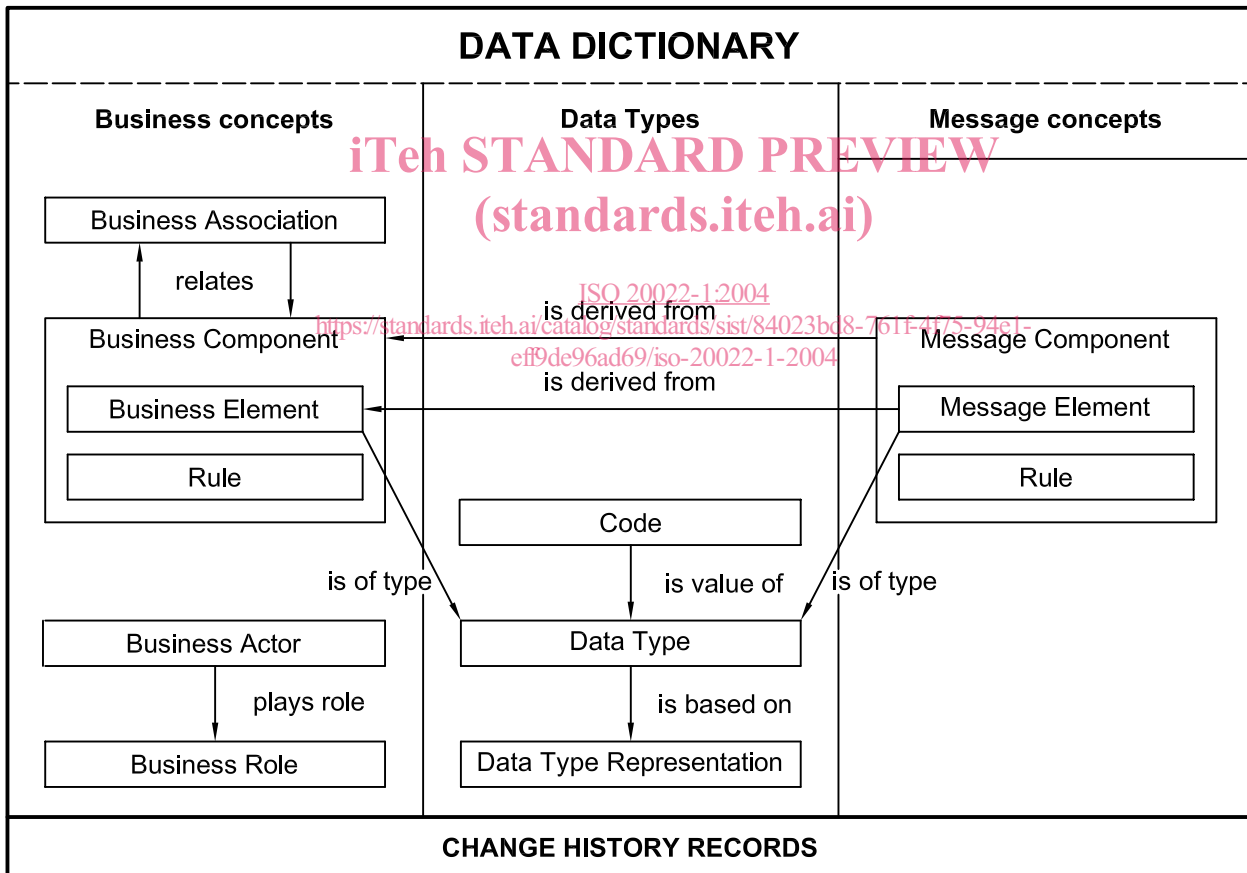


Figure 1 — ISO 20022 Data Dictionary

3.2

Business Area

set of strongly related business activities, that provide a self-standing business value to a set of Business Actors

EXAMPLE Securities pre-trade, payment initiation.

NOTE 1 A Business Area may contain other Business Areas (i.e. hierarchical structure). At the lowest level it will contain a set of Business Processes.

NOTE 2 Business Areas are stored in the Business Process Catalogue.

See Figures 2 and 3.

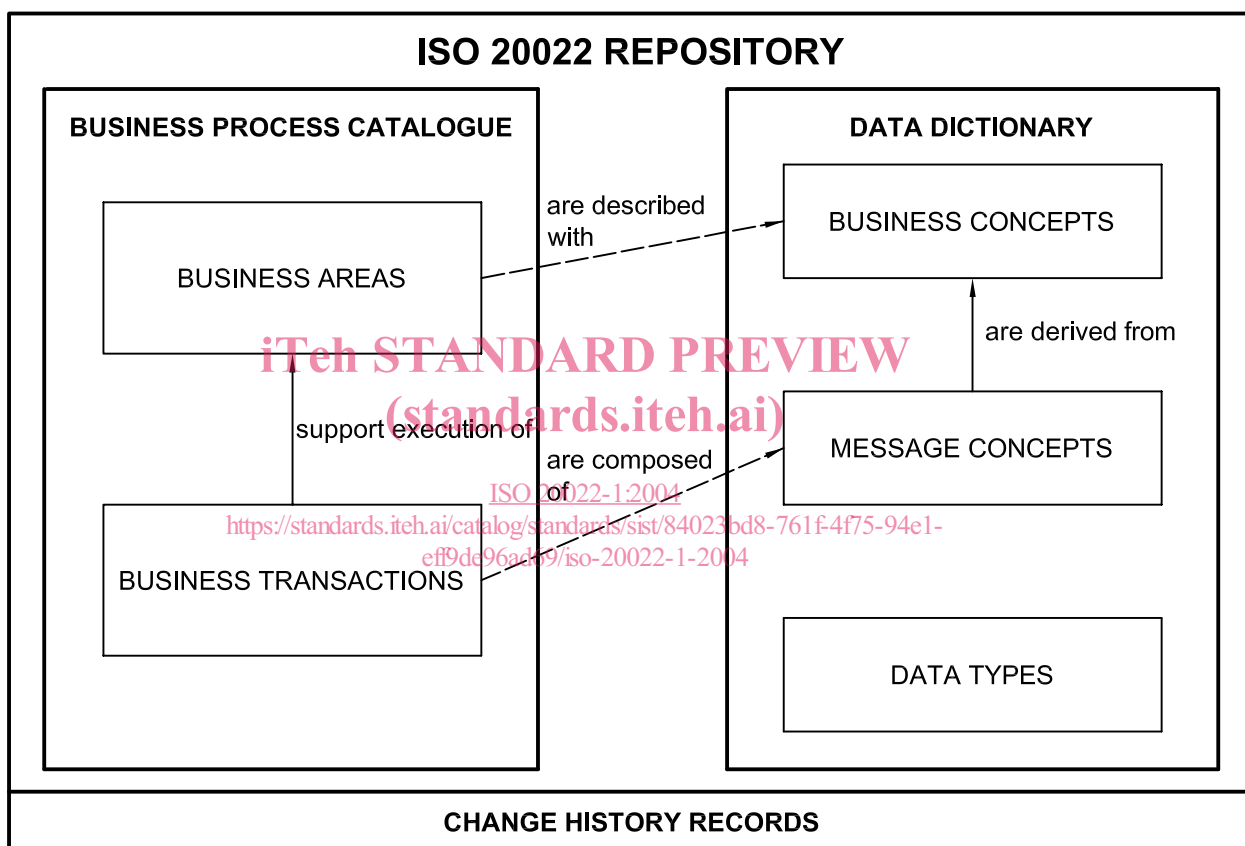


Figure 2 — ISO 20022 Repository Structure

3.3

Business Association

relation between two Business Components

EXAMPLE A party services an account.

NOTE 1 Business Associations are a category of Business Concepts. They are stored in the Data Dictionary where they are linked to their two related Business Components. Their meaning can only be described unambiguously in combination with these two Business Components.

NOTE 2 There can be several Business Associations between two particular Business Components.

See Figure 1.

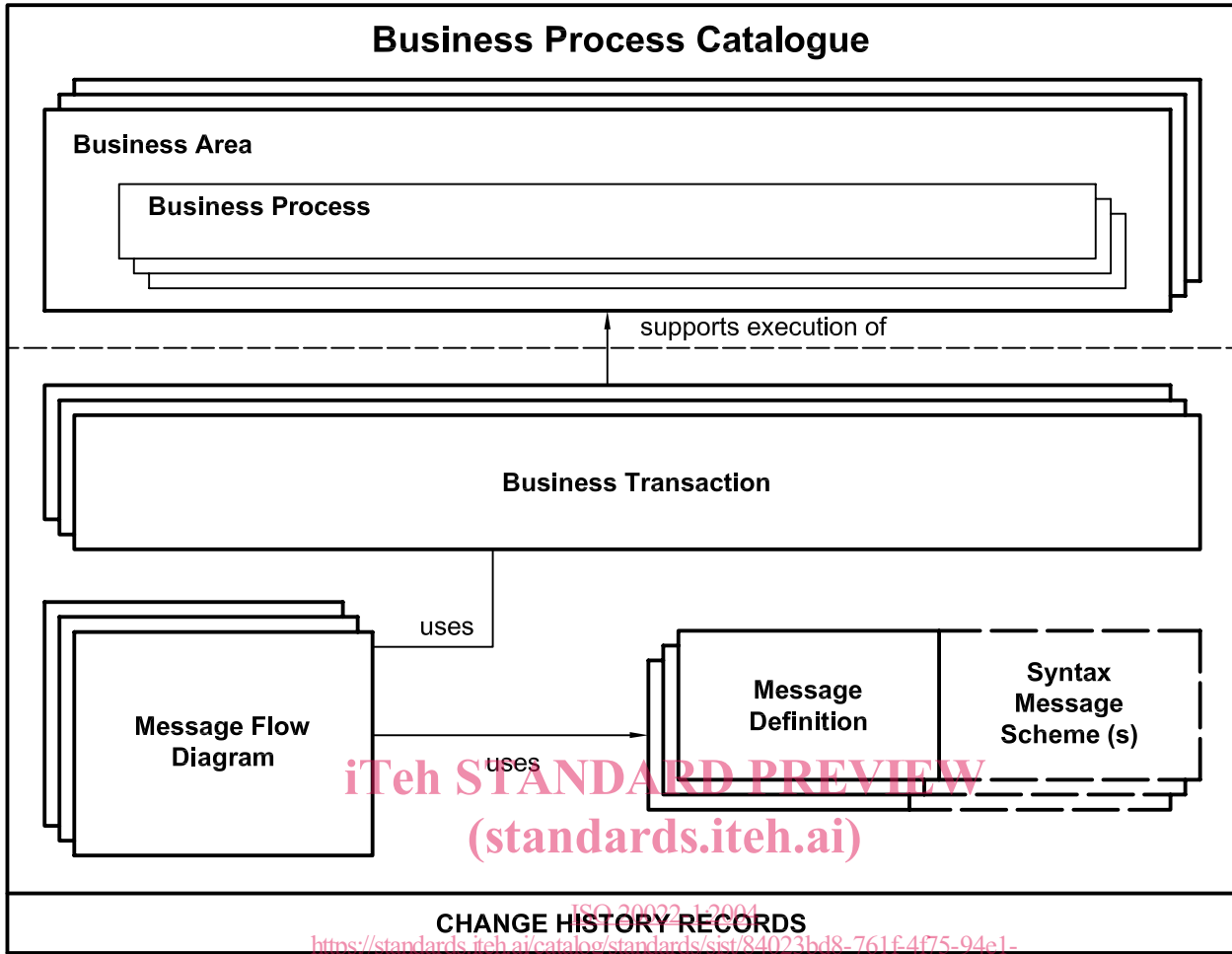


Figure 3 — Business Process Catalogue meta model

3.4 Business Component

representation of a (part of a) key business notion, characterized by specific Business Elements

EXAMPLE Account, trade, party.

NOTE 1 Business Components are a category of Business Concepts. They are stored in the Data Dictionary.

NOTE 2 A Business Component may have one or more Business Associations with other Business Components.

See Figure 1.

3.5 Business Concept

Dictionary Item with a business meaning

EXAMPLE Business Actor, Business Role, Business Component, Business Element, Business Association.

See Figures 1 and 2.