
**Financial services — Universal financial
industry message scheme —**

**Part 3:
Modelling**

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

Partie 3: Modélisation





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Contents

Page

Foreword	v
Introduction	vii
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Workflow activities overview	1
5 Scope level	4
5.1 General	4
5.1.1 Purpose	4
5.1.2 Key topics	4
5.1.3 Main activities	4
5.1.4 Deliverables	4
5.2 Activities	5
5.2.1 Define business context	5
5.2.2 Define BusinessProcesses	6
5.3 Guidelines	6
6 Conceptual level	7
6.1 General	7
6.1.1 Purpose	7
6.1.2 Key topics	7
6.1.3 Main activities	7
6.1.4 Deliverables	7
6.2 Activities	8
6.2.1 Define business model	8
6.2.2 Define BusinessTransactions	9
6.3 Guidelines	12
7 Logical level	12
7.1 General	12
7.1.1 Purpose	12
7.1.2 Key topics	12
7.1.3 Main activities	13
7.1.4 Deliverables	13
7.2 Activities	13
7.2.1 Define the MessageSet	13
7.2.2 Compose MessageDefinition	13
7.3 Constraints	17
7.3.1 Inheritance	17
7.3.2 Normalized MessageDefinitions	18
7.3.3 Normalization	18
7.3.4 Non-Constraint preference	18
7.3.5 Sibling constraints	18
7.3.6 Value derivation	18
7.3.7 Versions versus flavours	18
7.3.8 Modelling associations between MessageComponent Types	18
7.4 Guidelines	19
7.4.1 BusinessTransactions	19
7.4.2 MessageInstance style	19
7.4.3 Party Neutral MessageInstance	19

7.4.4	MessageInstance granularity	19
7.4.5	How to handle bi-directional relations	20
7.4.6	Factorize	20
7.4.7	How to define an ExternalSchema	20
7.4.8	How to enforce canonical form for date or time related user-defined DataTypes	20
8	Physical level	21
8.1	General	21
8.1.1	Purpose	21
8.1.2	Key topics	21
8.1.3	Main activities	21
8.1.4	Deliverables	21
8.2	Activities	21
8.2.1	Create syntax scheme	21
9	Conventions	22
9.1	Constraints	22
9.2	Naming	22
9.2.1	General	22
9.2.2	Generic rules applicable to all Repository Concepts	22
Annex A (normative)	Applied UML diagrams	23
Bibliography		24

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 20022-3 was prepared by Technical Committee ISO/TC 68, *Financial services*.

This first edition cancels and replaces ISO/TS 20022-3:2004.

ISO 20022 consists of the following parts, under the general title *Financial services — Universal financial industry message scheme*:

- *Part 1: Metamodel*
- *Part 2: UML profile*
- *Part 3: Modelling*
- *Part 4: XML Schema generation*
- *Part 5: Reverse engineering*
- *Part 6: Message transport characteristics*
- *Part 7: Registration*
- *Part 8: ASN.1 generation*

ISO 20022-1:2013, ISO 20022-2:2013, ISO 20022-3:2013, ISO 20022-4:2013, ISO 20022-5:2013, ISO 20022-6:2013, ISO 20022-7:2013 and ISO 20022-8:2013 will be implemented by the Registration Authority by no later than the end of May 2013, at which time support for the concepts set out within them will be effective. Users and potential users of the ISO 20022 series are encouraged to familiarize themselves with the 2013 editions as soon as possible, in order to understand their impact and take advantage of their content as soon as they are implemented by the Registration Authority. For further guidance, please contact the Registration Authority.

For the purposes of research on financial industry message standards, users are encouraged to share their views on ISO 20022:2013 and their priorities for changes to future editions of the document. Click on the link below to take part in the online survey:

http://www.surveymonkey.com/s/20022_2013

Introduction

This International Standard defines a scalable, methodical process to ensure consistent descriptions of messages throughout the financial services industry.

The purpose of this International Standard is to describe precisely and completely the externally observable aspects of financial services messaging in a way that can be verified independently against operational messaging.

The trigger for the creation of this International Standard was the rapid growth in the scale and sophistication of messaging within financial services during the 1990s using ISO 15022. The financial services industry (from here on referred to as "the industry") created the first version of this International Standard as the successor to ISO 15022 in response to that trigger. Since ISO 15022, the industry has broadened the scope from securities to the entire industry for this International Standard.

This International Standard is based on open technology standards, which historically have evolved more rapidly than the industry itself. Consequently, this International Standard adopted a model-driven approach where the model of the industry's messaging can evolve separately from the evolution of the messaging technology standards. The period during which this International Standard has emerged followed the widespread adoption of the World Wide Web (the Web) for business. XML (eXtensible Mark-up Language) emerged as the *de facto* standard for document representation on the Web and it became the first syntax for ISO 20022.

The modelling process is further refined into three levels which, in addition to the messaging technology standard, is why this International Standard is based on four levels: the Scope level, the Conceptual level, the Logical level and the Physical level.

This four-level approach is based on the first four levels of the Zachman Framework. The remaining two levels of the Zachman Framework are equivalent to the implementations and the operational levels, respectively.

In ISO 20022-1, the first, second and third levels are described in UML (Unified Modelling Language) because it is widely supported and supports multiple levels of abstraction. The models created in accordance with this International Standard are technology independent in that they do not require any particular physical expression or implementation. Such models aim to describe all parts of the message exchange. The models form the definition of the protocol between participants exchanging messages. This International Standard defines a method that describes a process by which these models can be created and maintained by the modellers.

The models and the Physical level artefacts are stored in a central repository, serviced by a Registration Authority. This International Standard's repository is available on the World Wide Web and offers public access for browsing.

The Repository is organized into two areas:

- A DataDictionary containing the industry model elements likely to have further or repeated use.
- A BusinessProcessCatalogue that contains models describing specific message definitions and business processes, and physical syntax implementations.

This International Standard is organized into the following parts.

- ISO 20022-1 describes in MOF (Meta-Object Facility) the metamodel of all the models and the Repository.

- ISO 20022-2 covers the UML profile, a grounding of general UML into a specific subset defined for this International Standard (to be used when UML is selected to define the models).
- This part of ISO 20022 describes a modelling method to produce models for this International Standard.
- ISO 20022-4 covers XML schema generation rules to transform a Logical level model into a Physical level description in the syntaxes.
- ISO 20022-5 covers logical model alignment and reverse engineering of existing message syntaxes.
- ISO 20022-6 covers message transport characteristics that define the quality of service required by the business process definitions so that they can operate successfully.
- ISO 20022-7 describes the process of managing the registration of models and physical syntax implementations.
- ISO 20022-8 gives ASN.1 syntax generation rules to transform a Logical level model into a Physical level description in ASN.1.

Financial services — Universal financial industry message scheme —

Part 3: Modelling

1 Scope

This part of ISO 20022 describes the modelling workflow, complementing ISO 20022-1 and ISO 20022-2. The modelling workflow describes the required steps a modeller follows in order to develop and maintain standardized BusinessTransactions and MessageSets.

This part of ISO 20022 is not intended to describe what will be the permissible artefacts and/or documents to be submitted to the Registration Authority (this information is contained in ISO 20022-7).

Examples are provided only to illustrate the modelling methodology and are not normative.

2 Normative references

ISO 20022-1, *Financial services — Universal financial industry message scheme — Part 1: Metamodel*

ISO 20022-2, *Financial services — Universal financial industry message scheme — Part 2: UML profile*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 20022-1 and ISO 20022-2 apply.

4 Workflow activities overview

The objective of a standardized BusinessTransaction is to define a commonly agreed solution for communication problems existing among different organizations within the context of a given BusinessProcess.

For a given communication problem in a given business context, several solutions can be developed. The purpose of this part of ISO 20022 is to explain the different steps a modeller should follow to ensure that all ISO 20022 items such as BusinessComponents/BusinessElements, MessageComponentTypes/MessageElements, BusinessTransactions and MessageDefinitions are defined in a consistent way.

The ISO 20022 methodology is composed of a set of activities. These activities are grouped into the following levels:

- Scope level;
- Conceptual level;