INTERNATIONAL STANDARD

ISO
20022-3

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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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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

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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.

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ca4e2228939a/iso-20022-3-2013

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;

— Logical level;

— Physical level.

For each of these activities, this part of ISO 20022 describes:

— the artefacts needed to start this activity (required input);

— the artefacts that should be the result of this activity (expected output);

— an example (where useful);

— any constraints and rules of modelling that should be followed or taken into account.
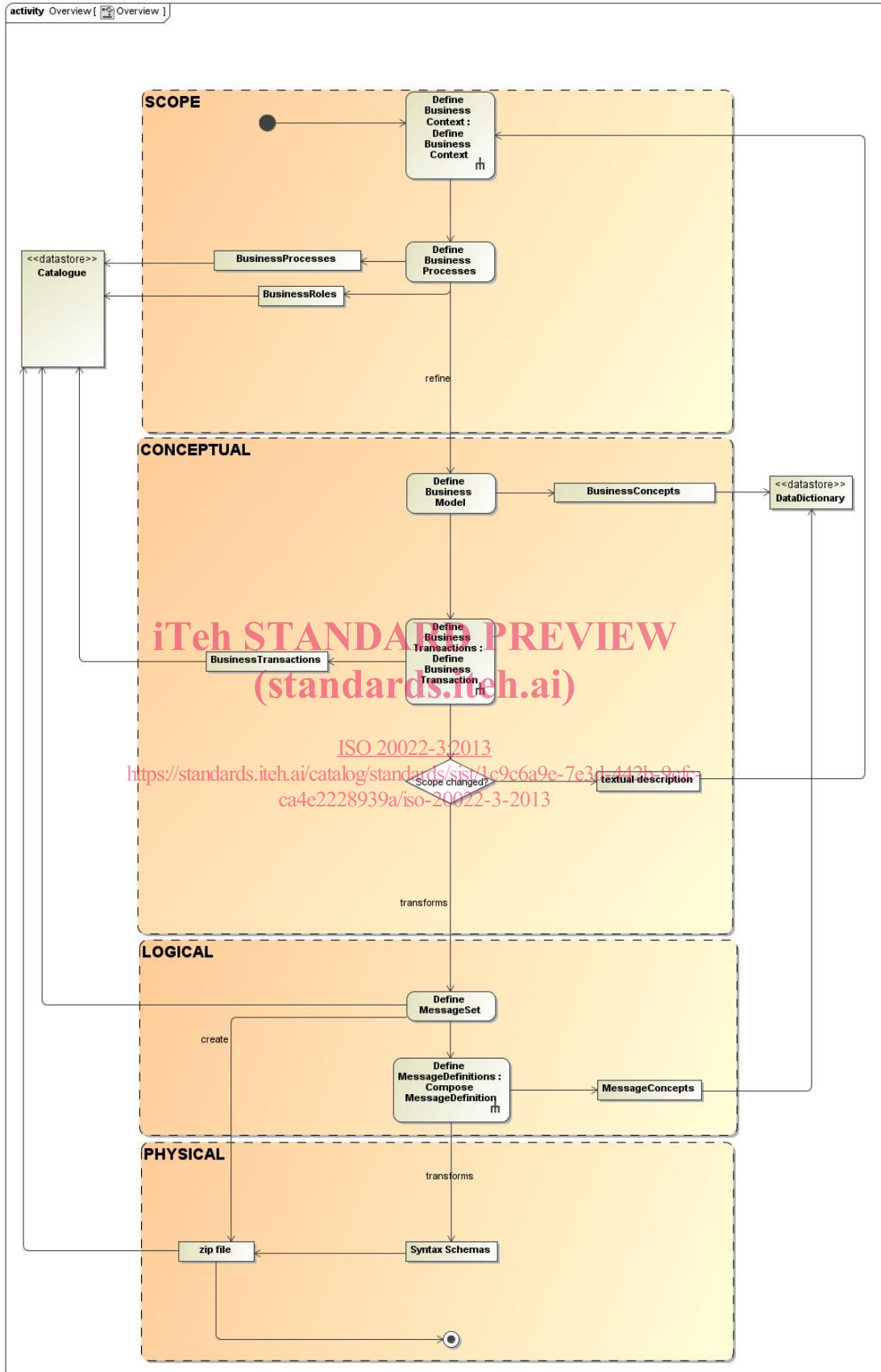
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Figure 1 — High level workflow activity diagram

5 Scope level

5.1 General

5.1.1 Purpose

The purpose of the Scope level is to achieve a better understanding of the BusinessArea and BusinessProcesses for which ISO 20022 compliant BusinessTransactions and MessageSets will be developed.

a) Describing the BusinessProcesses, including the BusinessRoles and their need for business information, helps in the identification of the communication problems that exist among the organizations that take part in these processes. Those communications problems are the main drivers for the next phase (Conceptual level).

b) Identifying business information manipulated in a BusinessArea is also important because the MessageDefinitions, which will be designed later, will contain data elements that are related to the BusinessConcepts. An explicit link between BusinessConcepts and MessageConcepts will be helpful for interoperability for later maintenance and for change management; if something changes in a BusinessArea, it will be possible to identify the impact on previously defined MessageDefinitions.

5.1.2 Key topics

The key topics of the Scope level are:

— identification of the business context of the communication problem to be solved;

— understanding the daily business in the BusinessArea and BusinessProcesses with no special focus on the BusinessTransactions and MessageSets to be developed;

— capturing the Business Concepts manipulated within the BusinessProcesses;

— ensuring that all users, such as business experts and standards developers, have a common understanding of the BusinessArea and the BusinessProcesses.

5.1.3 Main activities

The main activities of the Scope level are:

— specification of the boundaries of the project by selecting the BusinessArea(s), defining the Business Goal and identifying key BusinessComponents;

— specification of the BusinessProcesses.

5.1.4 Deliverables

The deliverables of the Scope level are:

— a textual description of the Business Context (objectives, scope and boundaries);

— models describing the BusinessProcesses, and the BusinessContext and BusinessRoles involved in these BusinessProcesses. (all model elements are enriched with textual descriptions, including a glossary of business terms).