International Standard

ISO 20022-1

Financial services — Universal financial industry message scheme —

Part 1: Metamodel

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

Partie 1: Métamodèle

Third edition
2026-04

Reference number
ISO 20022-1:2026(en)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 68, *Financial services*, Subcommittee SC 9, *Information exchange for financial services*.

This third edition cancels and replaces the second edition (ISO 20022-1:2013), which has been technically revised.

The main changes are as follows:

— changes:
  — Use of ISO/IEC 11404 instead of XML schema, except XML Schema temporal types remain.
  — CodeSet trace to BusinessCodeSet, formalising the two-level approach used in practice.
  — Top level entries across the catalogue and dictionary have unique names.
  — BusinessArea moved to scope level to contain BusinessProcesses
— clarifications:
  — Cardinality specified and updated related constraints.
  — Lengths of Binary, String and Text types are positiveIntegers.
  — MessageAssociationEnd aggregation to align with BusinessAssociationEnd.
  — Choreography associated indirectly with MessageDefinitions via MessageSet, instead of directly.
— additions:
  — Defined term "Conformance" to replace use of "compliance"
  — SyntaxMessageScheme linked to Syntax.
  — Import relationship amongst BusinessTransactions.

- Conversation trace to Choreography, as a conversation is an instance of a choreography.
- Conversation aggregates MessageInstances to MessagingEndpoints, as per its definition.
- Pointer data type to enable direct references within each message instance.
- Binary types specify preferred text representation.
- Minor version properties (revision, variation) and draft were added to MessageDefinition
- Path of traces from BusinessComponent to BusinessElement.
- InterfaceSpecifications traces to logical InterfaceDefinitions comprising of Operations with Parameters.
- Kind and Type of Constraint.
- Version relationships amongst RepositoryConcept.

A list of all parts in the ISO 20022 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The ISO 20022 series defines a scalable, methodical process to ensure consistent descriptions of messages throughout the financial services industry.

The purpose of the ISO 20022 series 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 the ISO 20022 series was the rapid growth in the scale and sophistication of messaging within financial services during the 1990s using the ISO 15022 series. The financial services industry (hereafter referred to as "the industry") created the first version of the ISO 20022 series as the successor to the ISO 15022 series in response to that trigger. Since the ISO 15022 series, the industry has broadened the scope from securities to the entire industry for the ISO 20022 series.

The ISO 20022 series is based on open technology standards, which historically have evolved more rapidly than the industry itself. Consequently, the ISO 20022 series 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 the ISO 20022 series has emerged followed the widespread adoption of the internet for business. The eXtensible Mark-up Language (XML) emerged as the de facto standard for document representation on the internet and it became the first syntax for the ISO 20022 series.

The modelling process is further refined into three levels which, in addition to the messaging technology standard, is why the ISO 20022 series 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[5]. The remaining two levels of the Zachman Framework are equivalent to the implementations and the operational levels, respectively.

In this document, the first, second and third levels are described in Unified Modelling Language (UML) because it is widely supported and supports multiple levels of abstraction. The models created in accordance with this document 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 document defines a process by which these models can be created and maintained by the modellers.

The model and physical level artefacts artefacts are stored in an ISO 20022 Repository (hereafter referred to as "the Repository"). The Repository and physical level artefacts are exposed in a publicly accessible location, such as a website, serviced by a Registration Authority. The name and contact information of the Registration Authority for the ISO 20022 series can be found at www.iso.org/maintenance_agencies.

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 MessageDefinitions, and business processes and physical syntax implementations.

The ISO 20022 series is organized into the following parts:

— This document describes the metamodel of all the models and the Repository according to ISO/IEC 19502:2005 (MOF).

— ISO 20022-2 covers the UML profile, a grounding of general UML into a specific subset defined for the ISO 20022 series (to be used when UML is selected to define the models).

— ISO 20022-3 describes a modelling method to produce models for the ISO 20022 series.

— 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 business concept model interoperability, and logical model alignment and reverse engineering.

— 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.

— ISO 20022-9 describes generic guidelines which are used to define schema generation rules for any specific syntax.

Defined terms of this document are in PascalCase and will use PascalCase throughout the document.

Financial services — Universal financial industry message scheme —

Part 1: Metamodel

1 Scope

This document specifies:

— the overall description of the modelling approach;

— the overall description of the ISO 20022 Repository (hereby referred to as Repository) contents;

— a high-level description of the input to be accepted by the Registration Authority to feed/modify the Repository's DataDictionary and BusinessProcessCatalogue;

— a high-level description of the Repository output to be made publicly available by the Registration Authority.

BusinessTransactions and MessageSets Conforming with ISO 20022 series can be used for electronic data interchange amongst any industry participants (financial and others), independently of any specific communication network. Network-dependent rules, such as message acknowledgement and message protection, are beyond the scope of the ISO 20022 series.

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

ISO 20022-3, *Financial services — Universal financial industry message scheme— Part 3: Modelling*

ISO/IEC 11404, *Information technology — General-Purpose Datatypes (GPD)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
Address
identification and efficient resolution to the location of a *MessagingEndpoint* (3.67)

Note 1 to entry: The purpose of an Address is to efficiently resolve a location. This is what distinguishes an Address from any other Identifier, which merely identifies something.

3.2
Amount
number of monetary units specified in a currency where the unit of currency is explicit or implied

3.3
application programming interface
API
set of well-defined methods, functions, protocols, routines or commands which application software uses with facilities of programming languages to invoke services

Note 1 to entry: An API is available for different types of software, including Web-based system/ecosystem.

[SOURCE: ISO/TS 23029:2020, 3.1]

3.4
binary
set of values drawn from the value space of "octetstring", the datatype of variable-length encodings using 8-bit codes, as specified by ISO/IEC 11404

3.5
Boolean
set of values drawn from the value space of "Boolean", two-value logic, as specified by ISO/IEC 11404

3.6
BroadcastList
set of references to MessagingEndpoints (identified by their *Address* (3.1)) that is used for message broadcasting.

Note 1 to entry: The BroadcastList is managed by the MessageTransportSystem, which provides a mechanism to maintain the BroadcastList.

Note 2 to entry: "Set" means the list of Addresses is unordered and each Address is present once.

3.7
BusinessActivity
decisions or actions by a *Participant* (3.71) which can initiate the sending of a *MessageTransmission* (3.63) or be triggered by receiving a *MessageTransmission* (3.63)

Note 1 to entry: A BusinessActivity can exchange information via an API.

3.8
BusinessArea
set of strongly related *BusinessProcesses* (3.19) that provide a self-standing business value to a set of *BusinessRoles* (3.22)

EXAMPLE Securities pre-trade, payment initiation.

Note 1 to entry: BusinessAreas are stored in the BusinessProcessCatalogue.

3.9
BusinessAssociation
relation between two *BusinessComponents* (3.13)

EXAMPLE The servicing of an account by a party.

Note 1 to entry: BusinessAssociations are a category of BusinessConcepts. Their meaning can only be described unambiguously in combination with these two BusinessComponents.

Note 2 to entry: There can be several BusinessAssociations between two particular BusinessComponents.

3.10
BusinessAssociationEnd
the endpoint of a *BusinessAssociation* (3.9), which connects the BusinessAssociation to the *BusinessComponent* (3.13)

3.11
BusinessAttribute
a *BusinessElement* (3.17), typed by a *BusinessComponent* (3.13) or a *DataType* (3.35)

EXAMPLE AccountIdentification, PhoneNumber.

Note 1 to entry: A BusinessAssociationEnd is always typed by another BusinessComponent

3.12
BusinessCodeSet
complete and enumerated set of *Codes* (3.27) grouped together to characterize all the values of an attribute

3.13
BusinessComponent
representation of a (part of a) key business notion, characterized by specific *BusinessElements* (3.17)

EXAMPLE Account, trade, party.

Note 1 to entry: BusinessComponents are a category of BusinessConcepts. They are stored in the DataDictionary.

Note 2 to entry: A BusinessComponent can have one or more semantic relations with other BusinessComponents.

3.14
BusinessComponentTrace
semantic relationship between a *MessageComponentType* (3.55) or *MessageElement* (3.60) and the *BusinessComponent* (3.13) from which it is derived

3.15
BusinessConcept
DataDictionary (3.34) item of meaning to the business expressed as a *BusinessComponent* (3.13), *BusinessElement* (3.17) or *BusinessAssociation* (3.9)

3.16
business domain
broad area of an industry with its own regulatory framework(s), usually supported by specialist areas within organisations with its own terminology

EXAMPLE Card payments and related transactions, payments and cash management, trade services, securities, foreign exchange, bank loan and deposits, derivatives, commodities.

3.17
BusinessElement
property of a *BusinessComponent* (3.13) that has a distinctive meaning within the scope of that *BusinessComponent* (3.13)

EXAMPLE Account status, deal price, trade date and deal time.

3.18
BusinessElementTrace
semantic relationship between a *MessageElement* (3.60) and the *BusinessElement* (3.17) from which it is derived

3.19
BusinessProcess
name and definition of a set of related business activities undertaken by *BusinessRoles* (3.22) within a *BusinessArea* (3.8) which fulfils a business objective

EXAMPLE Securities ordering, trade matching.

Note 1 to entry: A BusinessProcess can contain other BusinessProcesses such as in a hierarchical structure.

Note 2 to entry: BusinessProcesses are stored in the BusinessProcessCatalogue.

Note 3 to entry: The definition of a scope level BusinessProcess can include or extend other BusinessProcesses.

3.20
BusinessProcessCatalogue
part of the *Repository* (3.76) which contains all items related to *BusinessProcess* (3.19) and *BusinessTransaction* (3.24)

Note 1 to entry: It contains related items from the BusinessArea down to the MessageDefinitions and their physical implementation.

Note 2 to entry: CatalogueItem is used as a synonym for entries in the BusinessProcessCatalogue.

3.21
BusinessProcessTrace
relationship between a *BusinessTransaction* (3.24) and the *BusinessProcess* (3.19) on which the *BusinessTransaction* (3.24) is based

3.22
BusinessRole
functional role played by a business actor in a particular *BusinessProcess* (3.19) or *BusinessTransaction* (3.24)

EXAMPLE Account owner, buyer.

Note 1 to entry: BusinessRoles are a category of BusinessConcepts and are stored in the DataDictionary.

Note 2 to entry: A business actor can play different BusinessRoles in different BusinessProcesses.

3.23
BusinessRoleTrace
relationship between a *Participant* (3.71) in a *BusinessTransaction* (3.24) and a *BusinessRole* (3.22) identified in the *BusinessProcess* (3.19) from which the *BusinessTransaction* (3.24) is derived

3.24
BusinessTransaction
particular solution that meets the communication requirements and the interaction requirements of a particular *BusinessProcess* (3.19) and *BusinessArea* (3.8)

Note 1 to entry: A BusinessTransaction is typically based on the use of MessageInstances.

3.25
BusinessTransactionTrace
relationship between a *BusinessTransaction* (3.24) and its physical implementation

3.26
ChoiceComponent
re-usable *DictionaryItem* (3.40) that is a building block for assembling *MessageDefinitions* (3.57), composed of a choice of *MessageElements* (3.60)

Note 1 to entry: ChoiceComponents are stored in the DataDictionary.

3.27
Code
character string (letters, figures or symbols) that for either brevity or language independence, or both, can be used to represent or replace a definitive value or text of an attribute

3.28
CodeSet
type that has a finite set of valid *Code* (3.27) values, as specified by the State (ISO/IEC 11404:2007, 8.1.2) datatype of ISO/IEC 11404

3.29
CodeSetTrace
semantic relationship between two *CodeSets* (3.28) whereby the derived *CodeSet* (3.28) is used as the type of a *BusinessElement* (3.17) and the deriving *CodeSet* (3.28) is used as the type of a *MessageElement* (3.60)

3.30
Conformant
adherence to requirements, rules, guidelines and advice

EXAMPLE 1 A model design is Conformant with ISO 20022-1 and ISO 20022-3.

EXAMPLE 2 Schema generation is Conformant with its specification.

Note 1 to entry: "Conformance", "Conforming", "Conform" forms of the term carry the same definition.

3.31
Constraint
rule that is universally satisfied, i.e. all conditions required for the *Constraint* (3.31) to be applicable are known

EXAMPLE An Account has an AccountOwner.

3.32
ConvergenceDocumentation
documentation set showing relations between ISO 20022 *MessageDefinitions* (3.57), *MessageComponentTypes* (3.55), *MessageElements* (3.60), *BusinessComponents* (3.13) or *BusinessElements* (3.17), or between all, and items defined in other *IndustryMessageSets* (3.46)

3.33
Conversation
exchange of one or more *MessageInstances* (3.61) amongst *MessagingEndpoints* (3.67)

Note 1 to entry: In a synchronous Conversation, the sending MessagingEndpoint blocks the sending and receipt of other TransportMessages within the conversation, in which the TransportMessage was sent, while waiting for a response to this sent TransportMessage. This is not the case in an asynchronous conversation.

Note 2 to entry: If MessageChoreography exists for this business transaction, the Converstion conforms to it.

3.34
DataDictionary
part of the *Repository* (3.76) that contains all items that can be re-used during *BusinessProcess* (3.19) modelling and message definition activities

Note 1 to entry: The DataDictionary therefore contains BusinessConcepts, MessageConcepts and DataTypes.

3.35
DataType
representation of a set of values without identity

3.36
date
any set of values drawn from the value space of "time" with a time-unit of "day", as specified by ISO/IEC 11404

3.37
dateTime
any set of values drawn from the value space of "time", as specified by ISO/IEC 11404

3.38
Day
any set of values drawn from the value space of "dayof-Month" operation of time datatype, as specified by ISO/IEC 11404

3.39
decimal
any set of values drawn from the value space of "scaled" with a radix of "10", as specified by ISO/IEC 11404

3.40
DictionaryItem
BusinessConcept (3.15), *DataType* (3.35), *MessageConcept* (3.56) items

3.41
duration
any set of values drawn from the value space of "time interval", as specified by ISO/IEC 11404

3.42
Encoding
wire format of message instances

EXAMPLE 1 ASN.1 PER

EXAMPLE 2 ASN.1 XER

EXAMPLE 3 XSD XML

EXAMPLE 4 JSON[12]

EXAMPLE 5 RDF TTL

Note 1 to entry: An encoding specifies the format of message instances that are structured according to a SyntaxMessageScheme.

3.43
ExternalSchema
reusable *DictionaryItem* (3.40) that allows referral to a structure defined outside the ISO 20022*MessageDefinition* (3.57)

EXAMPLE In case of XML (eXtensible Markup Language), this artefact is transformed into an XML Schema "any" element and the external structure is defined through another XML Schema.

3.44
IdentifierSet
unenumerated set of values outside the *Repository* (3.76) whereby each value distinguishes uniquely one instance of an object within an identification scheme from all other instances of the objects within the same scheme

3.45
Indicator
list of exactly two mutually exclusive values that express the only two possible states of an instance of an object

EXAMPLE 1 PlusOrMinusIndicator can be plus or minus.

EXAMPLE 2 DebitCreditIndicator can be debit or credit.

3.46
IndustryMessageSet
set of non-ISO 20022 *Conformant* (3.30) messages, which is defined and used by part of the financial industry

EXAMPLE The set of FIX messages.

3.47
InterfaceDefinition
aggregation of *Operations* (3.70) used in *MessageChoreography* (3.53)

3.48
InterfaceSpecification
rendering of the *InterfaceDefinition* (3.47) in a specific interface definition language

EXAMPLE Open API Specification (Swagger), AsyncAPI Specification, WDSL.

3.49
ISO15022MessageSet
IndustryMessageSet (3.46) constructed according to the rules defined in ISO 15022 series, which is stored in the ISO 15022 Catalogue of Messages

3.50
MessageAssociationEnd
type of *MessageElement* (3.60) that specifies the role of a message association

3.51
MessageAttribute
type of *MessageElement* (3.60) which is either a *DataType* (3.35) or a *MessageComponentType* (3.55)

3.52
MessageBuildingBlock
characteristic of a *MessageDefinition* (3.57) that has a unique meaning within the scope of that *MessageDefinition* (3.57)

Note 1 to entry: MessageBuildingBlocks are not reused, since they only have meaning within a specific MessageDefinition.

3.53
MessageChoreography
precise and complete description of a message exchange within a *BusinessTransaction* (3.24), describing the sequence and correlation of messages within a conversation, including the constraints on the interaction between *Participants* (3.71) including conforming to corresponding *MessageDefinitions* (3.57) or *InterfaceDefinitions* (3.47)

Note 1 to entry: Every BusinessTransaction contains its own MessageChoreography.

Note 2 to entry: Includes messaes that flow either to or from interfaces.

3.54
MessageComponent
re-usable *DictionaryItem* (3.40) that is a building block for assembling *MessageDefinitions* (3.57), composed of a sequence of *MessageElements* (3.60)

EXAMPLE "Trade Details" which contains a number of the properties of the related BusinessComponent "Trade".

3.55
MessageComponentType
MessageComponent (3.54),*ExternalSchema* (3.43) or *ChoiceComponent* (3.26)

Note 1 to entry: When a MessageComponentType has a business meaning it is linked to a BusinessComponent.

Note 2 to entry: MessageComponentTypes are a category of MessageConcepts and are stored in the DataDictionary.

3.56
MessageConcept
DataDictionary (3.34) artefact, which is not a *DataType* (3.35), that is used in a *MessageDefinition* (3.57)

3.57
MessageDefinition
formal description of the structure of a *MessageInstance* (3.61)

Note 1 to entry: The MessageDefinition is built as a tree structure of MessageComponentTypes and DataTypes. A MessageDefinition is uniquely identified in the BusinessProcessCatalogue.