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Financial services — Semantic technology —

Part 3: Semantic enrichment of the ISO 20022 conceptual model

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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.

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 documents 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).

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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*.

A list of all parts in the ISO 22126 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.

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Introduction

This document contains information on the perceived state of the art of semantic technology as it pertains to information exchange in financial services. It is informative, not normative.

This document reports on semantic enrichment of the ISO 20022 conceptual model.

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

Beyond its primary purpose of providing an operational model of elements, messages and their associated workflows, there is a further requirement for metadata to add an understanding of the meaning of their content and context.

The advent of semantic technology enables the enrichment of an ISO 20022 model repository:

— in a repository, annotating repository concepts with metadata using semantic markup or constraints;

— outside a repository, using references to repository concepts.

This is illustrated by demonstrating how the provenance of changes to a model repository can be tracked using the W3C PROV-O ontology specification[10].

In a repository, each concept can be annotated with semantic markup to indicate it is a synonym of a concept in another model or that it as an external code set. Semantic markup can also be used for tagging of names and definitions in other languages. Constraints enable the formal specification in logical languages of relationships between concepts.

Outside a repository, the resource description framework (RDF) can be used to reference repository concepts with internationalised resource identifiers (IRIs) constructed from object identifiers (OIDs), universally unique identifiers (UUIDs) or their names with the namespace of the schema, model, metamodel or registration authority website. This is illustrated with the provenance ontology (Prov-O), which can be used to track changes to concepts in a repository.

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Financial services — Semantic technology —

Part 3:
Semantic enrichment of the ISO 20022 conceptual model

1 Scope

This document examines semantic enrichment to support the maintenance of the ISO 20022 conceptual model. It reports on existing and proposed practices to enrich a model:

— in a repository, annotating repository concepts with metadata using semantic markup or constraints;

— outside a repository, using references to repository concepts, such as the provenance of changes.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 20022-1, *Financial services — Universal financial industry message scheme — Part 1: Metamodel*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 20022-1 and the following 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
semantic
related to distinct meaning

Note 1 to entry: As each word can have several meanings, the purpose of semantics is to clarify the exact meaning of a word in a context to refer to a particular concept.

3.2
provenance
information on the place and time of origin, derivation or generation of a resource or a record or proof of authenticity or of past ownership

[SOURCE: ISO/IEC 11179-7:2019, 3.1.10]

3.3
pedigree
relationship to an authoritative source

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