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Financial services — Semantic technology —

Part 5: Mapping from FIX Orchestra to the common model

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Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Mapping FIX Orchestra **2**
4.1 FIX Orchestra 2
4.1.1 General 2
4.1.2 Relationship to FIX 2
4.2 ISO 20022 model 2
4.3 Mapping approach 3
4.3.1 General 3
4.3.2 Ecore model creation 3
4.4 Model transformation 3
4.5 Incomplete mappings 4
4.6 Findings 4
4.6.1 General 4
4.6.2 Behavioural model 4
4.6.3 Datatypes 5
4.6.4 Constraints 5
Bibliography **6**

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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*.

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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

FIX Orchestra is a standard issued by FIX Trading Community to exchange message structures, workflow choreographies and application behaviours between trading counterparties. FIX Orchestra is currently Version 1.0 Draft Standard and is published as a specification with an XML Schema.

A study was conducted to map FIX message definitions, as encoded in the FIX Orchestra schema, to semantic terms consistent with the ISO 20022 metamodel. The objective was to map multiple financial protocols, including FIX, to ISO 20022, a common model, so that they can be compared, and for commonalities to be identified. Any deficiencies of the model discovered will be rectified so that its capacity to support other financial industry protocols can be improved in future versions.

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Financial services — Semantic technology —

Part 5:
Mapping from FIX Orchestra to the common model

1 Scope

This document reports on a study to map messages defined using FIX Orchestra into the ISO 20022 model.

2 Normative references

There are no normative references in this document.

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
actor
peer in a messaging system

3.2
code set
datatype that constrains message values to one member of a finite set

3.3
component
predefined part of a message that may be reused in many message types

3.4
datatype
context-free data domain

3.5
field
smallest unit of business semantics

3.6
presence
property that specifies whether the member is required

3.7
repeating group
group component with many-to-one cardinality

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3.8
workflow
exchange of message types between actors

4 Mapping FIX Orchestra

4.1 FIX Orchestra

4.1.1 General

FIX Orchestra was designed to provide a distributable model of message definitions as well as workflow. Its motto is "machine readable rules of engagement". FIX Trading Community uses Orchestra to publish the FIX standard. Firms may use it to publish their rules of engagement, typically a modified subset of the FIX standard. The final rules of engagement are determined by agreement between counterparties.

Orchestra is serialized as XML, and is controlled by XML schemas, but consideration has been given to using RDF/OWL in the future.

Orchestra has two XML schemas: repository and interfaces. The repository schema defines message structures and workflow. FIX Orchestra incorporates a message model, but unlike ISO 20022 the message definitions are not traced to a formal business model or metamodel.

Elements of an Orchestra repository file include the following:

— Message definitions, including their reusable parts: components, repeating groups and fields. In FIX, message types are often overloaded for multiple use cases, so message scenarios refine message definitions for each use case.

— Field definitions, which have a datatype and may be constrained to the finite values of a code set.

— Code sets, which may either be internal, with explicitly enumerated codes, or maintained externally by another standards body, e.g. ISO 4217.

— Datatypes, of which FIX has defined about 20, but the Orchestra structure can accommodate datatypes defined by other protocols.

— Workflow, the exchange of message types to define a protocol for a service offering.

— Documentation about every element.

FIX standardizes multiple wire formats, including the original tag-value encoding, FIXML schema, JSON and binary encodings, such as simple binary encoding (SBE). However, the message definitions in FIX Orchestra are intended to be independent of presentation layer (i.e. the encoding syntax) and session layer protocols.

A counterparty may offer multiple services, such as order entry, market data, and clearing, each with its own protocol stack. FIX Orchestra provides a second schema, called interfaces, to define messaging protocol stacks and session configurations used to expose service offerings. Additionally, it supports declaration of sessions with user authentication and operational identifiers.

4.1.2 Relationship to FIX

Orchestra is being used to disseminate the FIX standard message definitions. However, it was designed to be capable of expressing other financial industry protocols as well.

4.2 ISO 20022 model

The ISO 20022 metamodel specifies the structure of a model comprising a business process catalogue, data dictionary and message transport package. The metamodel has been realized in Ecore, an

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