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Information technology — Business operational view —

Part 21: Guidance on the application of the Open-edi business transaction ontology in distributed business transaction repositories

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Foreword

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A list of all parts in the ISO/IEC 15944 series can be found on the ISO and IEC websites.

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Introduction

ISO/IEC 15944-4 defines the Open-edi Business Transaction Ontology (OeBTO) as a formal, rule-based specification and definition of the concepts pertaining to business transactions and scenarios and the relationships that hold among these concepts.

Figure 1 overviews the ontology of a business transaction. It is taken from ISO/IEC 15944-4:2015, Figure 21, modified as follows to bring to light certain properties that were not illustrated at the time:

— the generalization of "Partner" to "Person" is according to ISO/IEC 15944-4:2015, Figure 18;

— the business policy connections between the three types (i.e. Economic Resource Type, Economic Event Type and Economic Role) is according to ISO/IEC 15944-4:2015, Figure 13; and

— the connections of party (OeP) and counterparty (OeCP) are shown as distinct persons having negotiated the Economic Contract.

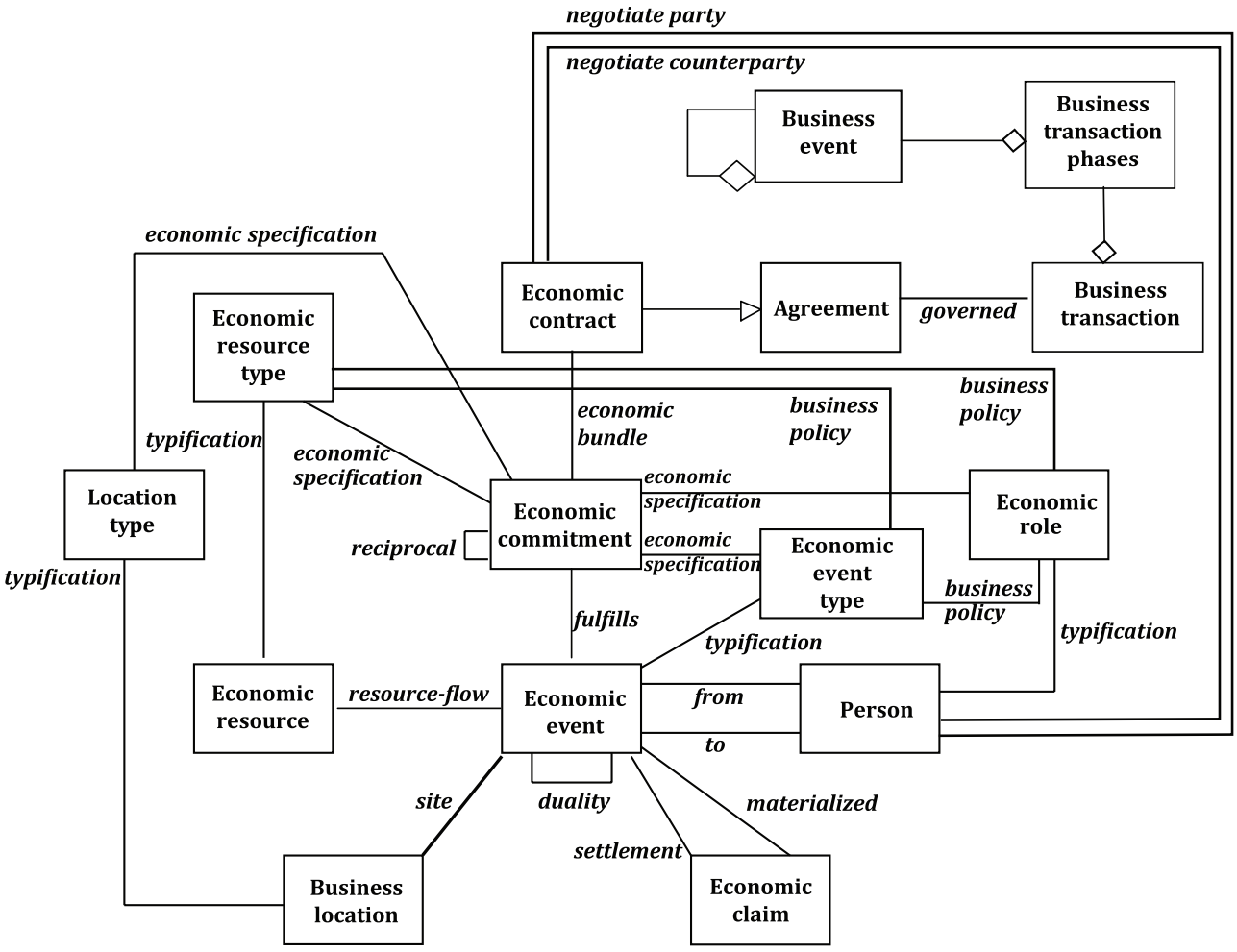


Figure 1 — Open-edi Business Transaction Ontology

According to ISO/IEC 15944-4, each business entity, depicted as a box in the diagram, is a computable representation of a real- world entity that participates, occurs, or is materialized during a business transaction. These are either static representations for the duration of the business transaction or dynamically changing representations implemented as individual state machines. Different business events effecting the business transaction are inputs influencing different sets of one or more of the state machines and changing their individual states. The particular states that each business entity can exhibit are established prior to the business transaction starting in order that the state machines act

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as deterministic automatons for the duration. Initiating the business transaction instantiates the state machine of each business entity based on its negotiated definition.

The concept of a business collaboration that is illustrated in Figure 2. It has been updated from ISO/IEC 15944-4:2015, Figure 3 to bring to light the party (OeP) and counterparty (OeCP) as distinct persons of a generic nature, not necessarily a buyer nor a seller.

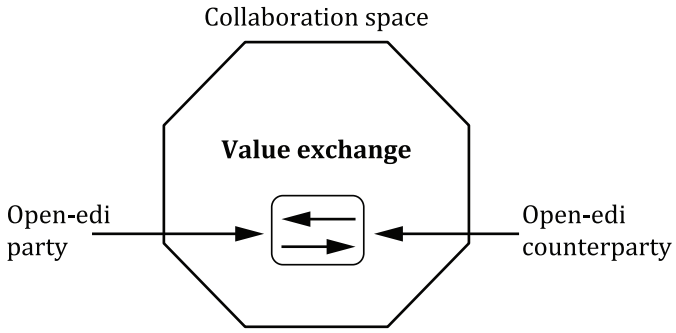


Figure 2 — Concept of a Business Collaboration

The collaboration space captures the information regarding a value exchange between the party and counterparty who have entered into an economic contract. The business transaction occurs within this space. The duality of the business transaction is that it involves two economic events, that is, two transfers of value in the value exchange. One transfer of value is from the OeP to the OeCP, and the other transfer of value is from the OeCP to the OeP.

ISO/IEC 15944-4 describes the ontology as the properties of this active multi-step process of the business transaction between party and counterparty from planning through to post-actualization. The business transaction transits through a series of states, one with each step, with each state stimulus being a business event. After any business event in the business transaction one can view the status of the interrelations between the ontology components as an outcome of that event.

This document supplements ISO/IEC 15944-4 by describing the Open-edi Distributed Business Transaction Repository (OeDBTR) properties of an indelible history or formal record of these changes in interrelations. This history can subsequently be queried or inspected. Without such a history of the state transitions of business entities, there is no record of the life cycle of the business transaction from instantiation to termination.

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Information technology — Business operational view —

Part 21:
Guidance on the application of the Open-edi business transaction ontology in distributed business transaction repositories

1 Scope

This document specifies the business operational view of an implementation of an Open-edi Distributed Business Transaction Repository (OeDBTR), building on the principles and concepts defined in ISO/IEC 15944-4 of a business transaction. The repository stores the history of the transitions in states of the economic claim and/or other business entities that happen over the course of a business transaction, and does so for a collection of business events. These business events, comprised of transactions and their states, can be identified unambiguously so as to provide the ability to inspect or query the information at some point after the record has been made. The distributed nature of the repository offers users ubiquitous and robust access to the recorded history.

A history of business transactions of market exchanges can be useful in auditing or other memoing-based activities, looking back at the immutable record of the interactions between parties.

This document does not specify the Functional Services View of a particular implementation of an Open-edi Distributed Business Transaction Repository. For best performance, candidate technologies would likely exhibit properties of long-term permanence, robust immutability, decentralized access, distributed resilience, and fine-grained addressability.

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/IEC 15944-4, *Information technology — Business operational view — Part 4: Business transaction scenarios — Accounting and economic ontology*

3 Terms and definitions

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

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

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

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

3.1
business
series of *processes* (3.34), each having a clearly understood purpose, involving more than one *Person* (3.33), realized through the exchange of information and directed towards some mutually agreed upon goal, extending over a period of time

[SOURCE: ISO/IEC 14662:2010, 3.2]

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