ISO/IEC 21838-1:2021 (E)

Information technology — Top-level ontologies (TLO) — Part 1: Requirements

Contents

Foreword

Introduction

1 Scope

2 Normative references

3 Terms and definitions

4 Requirements for a top-level ontology

4.1 TLO as textual artefact
4.1.1 Overview
4.1.2 Relations between textual artefact and axiomatizations of the TLO
4.2 Axiomatization in the Web Ontology Language (OWL 2 with direct semantics)
4.2.1 General
4.2.2 Alternative OWL 2 Axiomatization
4.3 Axiomatization in a CL-conforming language
4.4 Supplementary documentation
4.4.1 Overview
4.4.2 Documentation of the purpose of the TLO
4.4.3 Documentation concerning demonstration of conformance of a domain ontology to the TLO
4.4.4 Documentation concerning consistency of the CL axiomatization
4.4.5 Documentation concerning the relation between OWL and CL axiomatizations
4.4.6 Documentation demonstrating breadth of coverage
4.4.6.1 Overview
4.4.6.2 Space and time
4.4.6.3 Actuality and possibility
4.4.6.4 Classes and types
4.4.6.5 Time and change
4.4.6.6 Parts, wholes, unity and boundaries
4.4.6.7 Space and place
4.4.6.8 Scale and granularity
4.4.6.9 Qualities and other attributes
4.4.6.10 Quantities and mathematical entities
4.4.6.11 Processes and events
4.4.6.12 Constitution
4.4.6.13 Causality
4.4.6.14 Information and reference
4.4.6.15 Artefacts and socially constructed entities
4.4.6.16 Mental entities; imagined entities; fiction; mythology; religion
4.4.7 Domain neutrality
4.4.7.1 General
4.4.7.2 Existence as a self-standing ontology
4.4.8 Ontology management

5 Conformity

5.1 Overview
5.2 Ontology documentation
5.3 Supplementary documentation

Annex A (informative) Examples of ontology suites

Annex B (informative) The definition of 'ontology'

B.1 Use of 'ontology' in philosophy and computer science
B.2 Legacy definitions of 'ontology' in ISO standards
B.3 Definition of ontology-related terms in this document
B.3.1 Scope of application
B.3.2 Collection
B.3.3 Entities
B.3.4 Terms
B.3.5 Relational expressions

Annex C (informative) Examples of documentation demonstrating breadth of coverage

Annex D (informative) Conformance of a domain ontology to a TLO

D.1 Overview
D.2 Conformance through direct extension
D.3 Conformance through indirect extension
D.4 Conformance through re-engineering
D.5 Validating conformance to a TLO
D.5.1 Validating conformance to a TLO of ontologies axiomatized using OWL or CL
D.5.2 Validating conformance for ontologies axiomatized in a syntax other than OWL 2 or CL

Page count: 23