

ISO 19103:2015-12 (E)

Geographic information - Conceptual schema language

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Conformance	1
2.1	Introduction	1
2.2	UML version conformance	1
2.2.1	UML 2 conformance class	1
2.2.2	UML 1 to UML2 mapping conformance class	1
2.2.3	Conformant schema conformance class	2
2.3	Data types conformance	2
2.3.1	Introduction	2
2.3.2	Core types conformance class	2
2.3.3	Core and extension types conformance class	2
2.4	Model documentation conformance	3
2.4.1	Introduction	3
2.4.2	Model documentation conformance class	3
3	Normative references	3
4	Terms and definitions	4
5	Presentation and abbreviations	8
5.1	Presentation	8
5.3	Abbreviations	8
6	The ISO 19103 UML Profile - Use of UML	9
6.1	Introduction	9
6.2	General use of UML	9
6.3	Classifiers	10
6.4	Attributes	10
6.5	Enumerations and codelists	11
6.5.1	General rules	11
6.5.2	Enumerations	11
6.5.3	Code lists	12
6.6	Data types	13
6.7	Operations	13
6.8	Relationships	13
6.8.1	General	13
6.8.2	Associations	13
6.8.3	Generalizations	14
6.8.4	Realizations	14
6.9	Services	15
6.10	Stereotypes and keywords	16
6.10.1	Introduction	16
6.10.2	Stereotypes and keywords	16
6.11	Optional, conditional and mandatory attributes and association ends	16
6.11.1	Mandatory	16
6.11.2	Optional	17
6.11.3	Conditional	17

6.12	Naming and namespaces	17
6.13	Packages	18
6.14	Notes	18
6.15	Constraints	19
6.16	Documentation of models	19
7	Core data types	20
7.1	Introduction	20
7.2	Primitive types	20
7.2.1	General	20
7.2.2	Date	21
7.2.3	Time	21
7.2.4	DateTime	22
7.2.5	Number	22
7.2.6	Decimal	24
7.2.7	Integer	24
7.2.8	Real	24
7.2.9	Vector	25
7.2.10	CharacterString	25
7.2.11	Boolean	27
7.3	Collections	27
7.3.1	General	27
7.3.2	Collection templates	28
7.3.3	Set	28
7.3.4	Bag	28
7.3.5	Sequence	29
7.4	Enumerated types	29
7.4.1	General	29
7.4.2	Bit	30
7.4.3	Digit	30
7.4.4	Sign	30
7.5	Name types	30
7.5.1	General	30
7.5.2	Namespace	31
7.5.3	GenericName	33
7.5.4	ScopedName	33
7.5.5	LocalName	34
7.5.6	TypeName	35
7.5.7	MemberName	35
7.6	Any type	36
7.7	Record types	36
7.7.1	General	36
7.7.2	Record	36
7.7.3	RecordType	37
7.7.4	Field	37
7.7.5	FieldType	37
7.8	NULL and EMPTY values	37
Annex A (normative) Abstract test suite		38
Annex B (normative) Rules for mapping UML 1 models to UML 2 models		40
Annex C (normative) Datatypes-extension types		41
Annex D (normative) Formal UML profile		48
Annex E (informative) On conceptual schema languages		50
Annex F (informative) Modelling guidelines		58
Annex G (informative) Introduction to UML		67

Annex H (informative) Backwards compatibility 79
Bibliography 81