

ISO 19108:2002-09 (E)

Geographic information - Temporal schema

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Conformance	1
2.1	Conformance classes and requirements	1
2.2	Application schemas for data transfer	1
2.3	Application schemas for data with operations	1
2.4	Feature catalogues	1
2.5	Metadata element specifications	1
2.6	Metadata for data sets	1
3	Normative references	1
4	Terms, definitions and abbreviated terms	2
4.1	Terms and definitions	2
4.2	Abbreviated terms	6
5	Conceptual schema for temporal aspects of geographic information	6
5.1	Structure of the schema	6
5.2	Geometry of time	7
5.2.1	Time as a dimension	7
5.2.2	Temporal objects	7
5.2.3	Temporal geometric primitives	8
5.2.4	Temporal topological objects	13
5.3	Temporal reference systems	16
5.3.1	Types of temporal reference systems	16
5.3.2	Calendars and clocks	17
5.3.3	Temporal coordinate systems	19
5.3.4	Ordinal temporal reference systems	20
5.4	Temporal position	21
5.4.1	Introduction	21
5.4.2	TM_Position	21
5.4.3	TM_TemporalPosition	21
5.4.4	Position referenced to calendar and clock	23
5.4.5	Position referenced to a temporal coordinate system	23
5.4.6	Position referenced to an ordinal temporal reference system	24
5.5	Time and components of geographic information	24
5.5.1	Temporal aspects of geographic information components	24
5.5.2	Temporal feature attributes	25
5.5.3	Temporal feature operations	26
5.5.4	Time and feature associations	27
5.5.5	Temporal metadata elements	29
Annex A (normative) Abstract test suite		31
A.1	Application schemas for data transfer	31
A.2	Application schemas for data with operations	31
A.3	Feature catalogues	31
A.4	Metadata element specifications	32

A.5	Metadata for data sets	32
Annex B (informative) Use of time in application schemas		33
B.1	Temporal feature attributes	33
B.1.1	TM_GeometricPrimitive as a data type	33
B.1.2	TM_GeometricPrimitive as a temporal attribute	33
B.1.3	TM_TopologicalComplex as an attribute	34
B.1.4	Recurring attribute values	34
B.2	Temporal feature associations	35
B.2.1	Simple temporal associations	35
B.2.2	Feature succession	36
B.3	Feature associations with temporal characteristics	37
Annex C (normative) Describing temporal reference systems in metadata		38
C.1	Metadata for temporal reference systems	38
Annex D (informative) Description of calendars		41
D.1	Internal structure of calendars	41
D.2	Describing a calendar	42
D.3	Examples	43
D.3.1	Julian calendar	43
D.3.2	Modern Japanese calendar	44
D.3.3	Ancient Babylonian calendar	45
D.3.4	Global Positioning System calendar	47
Bibliography		48