



# INTERNATIONAL STANDARD ISO 19108:2002 TECHNICAL CORRIGENDUM 1

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

## Geographic information — Temporal schema

### TECHNICAL CORRIGENDUM 1

*Information géographique — Schéma temporel*

*RECTIFICATIF TECHNIQUE 1*

Technical Corrigendum 1 to ISO 19108:2002 was prepared by Technical Committee ISO/TC 211, *Geographic information/Geomatics*.

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*Page 3, Clause 4*

Replace 4.1.5 with the following:

**4.1.5**  
**edge**  
1-dimensional **topological primitive**

[ISO 19107]



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of an edge is a curve. The boundary of an edge is the set of one or two nodes  
jical complex.

## ISO 19108:2002/Cor.1:2006(E)

Replace 4.1.8 with the following:

### 4.1.8

#### **feature association**

relationship that links instances of one feature type with instances of the same or a different feature type

[ISO 19110]

NOTE 1 A feature association may occur as a type or an instance. Feature association type or feature association instance is used when only one is meant.

NOTE 2 Feature associations include aggregation of features.

Replace 4.1.9 with the following:

### 4.1.9

#### **feature attribute**

characteristic of a **feature**

[ISO 19101]

NOTE A feature attribute has a name, a data type and a value domain associated to it.

*Page 4, Clause 4*

Replace 4.1.15 with the following:

### 4.1.15

#### **geometric primitive**

geometric object representing a single, connected, homogeneous element of space

[ISO 19107]

NOTE Geometric primitives are non-decomposed objects that present information about geometric configuration. They include points, curves, surfaces and solids.

*Page 9, subclause 5.2.3.2*

Replace 5.2.3.2 a) with the following:

- a) *position:TM\_TemporalPosition* shall provide the position of this TM\_Instant. The TM\_TemporalPosition shall be associated with a single temporal reference system, as specified in 5.3. An instance of TM\_Instant is an identifiable object, while an instance of TM\_TemporalPosition is a data value. The TM\_TemporalPosition of a given TM\_Instant may be replaced by an equivalent TM\_TemporalPosition associated with a different temporal reference system.

*Page 10, subclause 5.2.3.5*

Replace 5.2.3.5 b) with the following:

- b) If this `TM_Primitive` is a `TM_Period` and other is a `TM_Instant`, the operation shall return a value for `TM_RelativePosition` as follows:

Returns:	If:
Before	<code>self.end.position &lt; other.position</code>
EndedBy	<code>self.end.position = other.position</code>
Contains	<code>self.begin.position &lt; other.position AND self.end.position &gt; other.position</code>
BegunBy	<code>self.begin.position = other.position</code>
After	<code>self.begin.position &gt; other.position</code>

*Page 11, subclause 5.2.3.5*

Replace 5.2.3.5 d) with the following:

- d) If both this `TM_Primitive` and other are `TM_Periods`, the operation shall return a value for `TM_RelativePosition` as follows:

Returns:	If:
Before	<code>self.end.position &lt; other.begin.position</code>
Meets	<code>self.end.position = other.begin.position</code>
Overlaps	<code>self.begin.position &lt; other.begin.position AND self.end.position &gt; other.begin.position AND self.end.position &lt; other.end.position</code>
Begins	<code>self.begin.position = other.begin.position AND self.end.position &lt; other.end.position</code>
BegunBy	<code>self.begin.position = other.begin.position AND self.end.position &gt; other.end.position</code>
During	<code>self.begin.position &gt; other.begin.position AND self.end.position &lt; other.end.position</code>
Contains	<code>self.begin.position &lt; other.begin.position AND self.end.position &gt; other.end.position</code>
Equals	<code>self.begin.position = other.begin.position AND self.end.position = other.end.position</code>
OverlappedBy	<code>self.begin.position &gt; other.begin.position AND self.begin.position &lt; other.end.position AND self.end.position &gt; other.end.position</code>
Ends	<code>self.begin.position &gt; other.begin.position AND self.end.position = other.end.position</code>
EndedBy	<code>self.begin.position &lt; other.begin.position AND self.end.position = other.end.position</code>
MetBy	<code>self.begin.position = other.end.position</code>
After	<code>self.begin.position &gt; other.end.position</code>

The operation shall raise an exception if any input value of `TM_TemporalPosition` is indeterminate.

*Page 12, subclause 5.2.3.7*

Replace 5.2.3.7 e) with the following:

- e) *timeIndicator* [0..1]:*CharacterString* = "T" shall be included whenever the sequence includes values for units of less than a day.

## ISO 19108:2002/Cor.1:2006(E)

### Page 14, subclause 5.2.4.2

Replace 5.2.4.2 with the following:

A topological primitive represents a single non-decomposable element of topology and its relationships to other topological primitives within a topological complex. The two topological primitives relevant for temporal information are the node, which is 0-dimensional, and the edge, which is 1-dimensional. In the temporal schema, they are represented by two subclasses of TM\_TopologicalPrimitive: TM\_Node and TM\_Edge (Figure 6). When an application includes information about temporal position as well as connectivity, a TM\_TopologicalPrimitive may be associated with a TM\_GeometricPrimitive of the same dimension. Because topological primitives are intended to provide information about connectivity, their most significant characteristics are the associations that link them to each other. Another consequence is the requirement that every TM\_TopologicalPrimitive shall be a member of one and only one TM\_TopologicalComplex.

### Page 17, subclause 5.3.1

Replace 5.3.1 b) with the following:

- b) *domainOfValidity:EX\_Extent* shall identify the space and time within which the TM\_ReferenceSystem is applicable. The data type EX\_Extent is specified in ISO/TS 19103. It permits a description of both spatial and temporal extent. This attribute shall be used whenever an application schema includes TM\_TemporalPositions referenced to a TM\_ReferenceSystem which has a valid extent that is less than the extent of a data set containing such values.

### Page 18, subclause 5.3.2.1

Replace Figure 8 with the following:

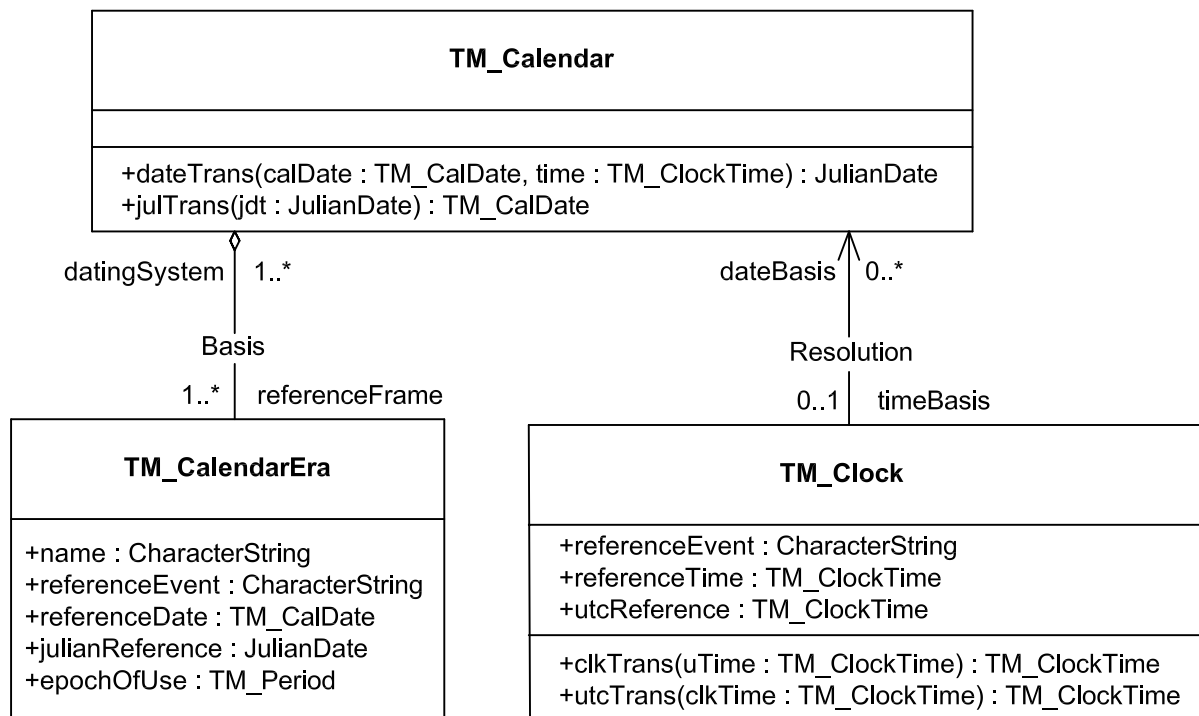


Figure 8 — Calendar and clock

Page 23, subclause 5.4.5.1

Replace 5.4.5.1 a) with the following:

- a) *coordinateValue:Number* holds the distance from the scale origin expressed as a multiple of the standard interval associated with the temporal coordinate system.

Page 33, subclause B.1.2

Replace the first paragraph with the following:

Figure B.2 illustrates an alternative way of using a TM\_GeometricPrimitive for a temporal feature attribute. In this case, the feature attribute periodOfOccupancy is represented as a UML class that is linked to Building by a UML association. PeriodOfOccupancy is a subtype of TM\_Period. It inherits the association roles begin and end from TM\_Period, but it restricts the data type in each case to DateTime. (At the TM\_Period level, the data type for these attributes is TM\_TemporalPosition.) It also inherits the interfaces TM\_Order, from which it uses the operation relativePosition(other : TM\_Primitive) : TM\_RelativePosition, and TM\_Separation, from which it uses the operations length() : TM\_Duration and distance (other : TM\_GeometricPrimitive) : TM\_Duration.

Page 38-40, Table C.1

Replace row 3 with the following:

3	domainOfValidity	Limits of space and time within which the temporal reference system is used	C/ Extent of temporal reference system less than extent of data set in which it is used?	N	EX_Extent	ISO/TS 19103
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Replace row 8 with the following:

8	referenceFrame	The calendar eras associated with the calendar being described	M	N	Role name	TM_CalendarEra
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Replace row 9 with the following:

9	timeBasis	The clock that is used with this calendar to define temporal position within a calendar day	O	1	Role name	TM_Clock
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Replace row 18 with the following:

18	referenceTime	Time of the reference event for this clock	M	1	TM_ClockTime	Time in the clock being described
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Replace row 28 with the following:

28	component	Ordinal eras that make up the highest level of this ordinal reference system	M	1	Role name	TM_OrdinalEra
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# ISO 19108:2002/Cor.1:2006(E)

Replace row 33 with the following:

33	member	Ordinal eras that subdivide this ordinal era	M	1	Role name	TM_OrdinalEra
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*Page 44, Table D.2*

Replace row 10 with the following:

TM_CalendarEra.julianReference	1721423.25
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