### NEW

### E52 Time-Span

Subclass of: [E1](#_E1_CRM_Entity) CRM Entity

Scope note: This class comprises abstract temporal extents in the course of time, in the sense of Galilean physics, having a beginning, an end and a duration.

Instances of E52 Time Span have no semantic connotations about phenomena happening within the temporal extent they represent. They do not convey any other meaning than a positioning on the “time-line” of chronology. The actual extent of an instance of E52 Time-Span can be approximated by properties of E52 Time-Span specifying giving inner and outer bounds in the form of dates (instances of E61 Time Primitive). Comparing knowledge about time-spans is fundamental for chronological reasoning.

Some instances of E52 Time-Span may be defined as the actual, in principle observable, temporal extent of instances of E2 Temporal Entity via the property *P4 has time-span (is time-span of):* E52 Time-Span. They constitute phenomenal time-spans as defined in CRMgeo (Doerr and Hiebel 2013). Since our knowledge of history is imperfect and physical phenomena are fuzzy in nature, the extent of phenomenal time-spans can only be described in approximation. An extreme case of approximation, might, for example, define an instance of E52 Time-Span having unknown beginning, end and duration. It may, nevertheless, be associated with other descriptions by which we can infer knowledge about it, such as in relative chronologies.

Some instances of E52 may be defined precisely as representing a declaration of a temporal extent, as, for instance, done in a business contract. They constitute declarative time-spans as defined in CRMgeo (Doerr and Hiebel 2013) and can be described via the property E61 Time Primitive *P170 defines time (time is defined by)*: E52 Time-Span.

Used as a common E52 Time-Span for two events, it would nevertheless define them as being simultaneous, even if nothing else was known.

Examples:

* 1961
* From 12-17-1993 to 12-8-1996
* 14h30 – 16h22 4th July 1945
* 9.30 am 1.1.1999 to 2.00 pm 1.1.1999
* duration of the Ming Dynasty (*Chan*, 2011)

In First Order Logic:

E52(x) ⊃ E1(x)

Properties:

[P79](#_P79_beginning_is_qualified by) beginning is qualified by: [E62](#_E62_String) String

[P80](#_P80_end_is_qualified by) end is qualified by: [E62](#_E62_String) String

[P81](#_P81_ongoing_throughout) ongoing throughout: [E61](#_E61_Time_Primitive) Time Primitive

[P82](#_P82_at_some_time within) at some time within: [E61](#_E61_Time_Primitive) Time Primitive

[P83](#_P83_had_at_least duration (was mini) had at least duration (was minimum duration of): [E54](#_E54_Dimension) Dimension

[P84](#_P84_had_at_most duration (was maxim) had at most duration (was maximum duration of): [E54](#_E54_Dimension) Dimension

[P86](#_P86_falls_within_(contains)) falls within (contains): [E52](#_E52_Time-Span) Time-Span

### P4 has time-span (is time-span of)

Domain: [E2](#_E2_Temporal_Entity) Temporal Entity

Range: [E52](#_E52_Time-Span) Time-Span

Quantification: many to one, necessary, dependent (1,1:1,n)

Scope note: This property associates an instance of E2 Temporal Entity with the instance of E52 Time-Span for which it was on-going. The associated instance of E52 Time-Span is understood as the real Time-Span during which the phenomena were active, which make up the temporal entity instance. More than one instance of E52 Temporal Entity may share a common instance of E52 Time-Span only if they come into being and end being by an identical declaration or by identical events.

Examples:

* the Yalta Conference (E7) *has time-span* Yalta Conference time-span (E52)

In First Order Logic:

P4(x,y) ⊃ E2(x)

P4(x,y) ⊃ E52(y)

### P170 defines time (time is defined by)

Domain: [E61](#_E61_Time_Primitive)Time Primitive

Range: [E52](#_E53_Place) Time Span

Scope note: This property associates an instance of E61 Time Primitive with the instance of [E52](#_E53_Place) Time Span it defines.

In First Order Logic:

P170(x,y) ⊃ E61(x)

P170(x,y) ⊃ E52(y)

**OLD:**

### E52 Time-Span

Subclass of: [E1](#_E1_CRM_Entity) CRM Entity

Scope note: This class comprises abstract temporal extents, in the sense of Galilean physics, having a beginning, an end and a duration.

Time Span has no other semantic connotations. Time-Spans are used to define the temporal extent of instances of E4 Period, E5 Event and any other phenomena valid for a certain time.

Since our knowledge of history is imperfect, instances of E52 Time-Span can best be considered as approximations of the actual Time-Spans of temporal entities. The properties of E52 Time-Span are intended to allow these approximations to be expressed precisely. An extreme case of approximation, might, for example, define an instance of E52 Time-Span having unknown beginning, end and duration. Used as a common E52 Time-Span for two events, it would nevertheless define them as being simultaneous, even if nothing else was known.

Automatic processing and querying of instances of E52 Time-Span is facilitated if data can be parsed into an E61 Time Primitive.

Examples:

* 1961
* From 12-17-1993 to 12-8-1996
* 14h30 – 16h22 4th July 1945
* 9.30 am 1.1.1999 to 2.00 pm 1.1.1999
* duration of the Ming Dynasty (*Chan*, 2011)

In First Order Logic:

E52(x) ⊃ E1(x)

Properties:

[P79](#_P79_beginning_is_qualified by) beginning is qualified by: [E62](#_E62_String) String

[P80](#_P80_end_is_qualified by) end is qualified by: [E62](#_E62_String) String

[P81](#_P81_ongoing_throughout) ongoing throughout: [E61](#_E61_Time_Primitive) Time Primitive

[P82](#_P82_at_some_time within) at some time within: [E61](#_E61_Time_Primitive) Time Primitive

[P83](#_P83_had_at_least duration (was mini) had at least duration (was minimum duration of): [E54](#_E54_Dimension) Dimension

[P84](#_P84_had_at_most duration (was maxim) had at most duration (was maximum duration of): [E54](#_E54_Dimension) Dimension

[P86](#_P86_falls_within_(contains)) falls within (contains): [E52](#_E52_Time-Span) Time-Span

### P4 has time-span (is time-span of)

Domain: [E2](#_E2_Temporal_Entity) Temporal Entity

Range: [E52](#_E52_Time-Span) Time-Span

Quantification: many to one, necessary, dependent (1,1:1,n)

Scope note: This property describes the temporal confinement of an instance of an E2 Temporal Entity.

The related instance of E52 Time-Span is understood as the real Time-Span during which the phenomena were active, which make up the temporal entity instance. It does not convey any other meaning than a positioning on the “time-line” of chronology. The Time-Span in turn is approximated by a set of dates (instances of E61 Time Primitive). Related temporal entities may share an instance of E52 Time-Span. Instances of E52 Time-Span may have completely unknown dates but other descriptions by which we can infer knowledge.

Examples:

* the Yalta Conference (E7) *has time-span* Yalta Conference time-span (E52)

In First Order Logic:

P4(x,y) ⊃ E2(x)

P4(x,y) ⊃ E52(y)