

# Proposal to Accommodate Event Constraints

<b>Authors</b>	Tony Proctor
<b>Created</b>	2013-02-06
<b>Title</b>	Event_Constraints
<b>Version</b>	1.0
<b>Type</b>	Technical
<b>Language</b>	English
<b>Description</b>	Proposed adoption constraints between events
<b>Suggested Keywords</b>	Events, Event-ordering

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# 1. Abstract

Proposal to accommodate relational constraints between events as a supplementary way of sequencing them, in addition to any known date values.

## 2. Proposal

The proposal is to provide a method of relating two events, even when they have no known date value. Valid relationships include:

Event A occurred before Event B (<)

Event A occurred before or at the same time as Event B (<=)

Event A occurred after Event B (>)

Event A occurred after or at the same time as Event B (>=)

Each Event may be related to one or more other events. There can only be one relation between any two specific events (i.e. no duplication). The network of relational constraints must form a Directed Acyclic Graph (DAG), which means no loops. Relational constraints are not mutually exclusive with using date values.

In order to validate a network of events which includes both date values and relational constraints, reference can be made to the algorithms of project management software. This type of software has to schedule project activities according to resource and timing constraints as well as meeting deadlines. This is virtually identical to the requirements of event constraints as proposed here.

### 2.1 Implicit Constraints

In addition to explicit constraints, there may be a case for some implicit ones such as the following:

- The birth event of a person is before the death event. For a stillborn, they would be identical.
- If the Data Model accommodates hierarchical events then the sub-events are constrained by the parent event.

## 3. Illustration

The following illustration uses STEMMA syntax to represent two birth-related events. The first is the birth itself, and the second is the civil registration of the birth.

```
<Event Key='eBirth'>
  <When>
    <Constraints><BeforeEvent Key='eBirthReg' /></Constraints>
  </When>
</Event>

<Event Key='eBirthReg'>
  <When><Date><Value>1956-Q2</Value></Date></When>
</Event>
```

Like many such cases in England and Wales, the date of the birth registration has been taken from the GRO index which only collects them according to yearly quarters. Although the actual date of registration will be on the birth certificate, acquiring a copy adds a very significant cost. The registration date is hence recorded to a granularity of a 3-monthly quarter.

What this represents is merely that the actual birth event precedes the birth-registration event. A registration would normally happen within 3 months of the event but this cannot be guaranteed.

## 4. Use Cases

In principle, events can be ordered to create a timeline. This is true even if the associated dates are represented in different calendar systems. However, the associated dates may be very approximate or even non-existent.

Relying on dates alone could leave related events as apparently independent of each other. Adding relational constraints provides additional information that cannot be represented numerically.

## 5. References

STEMMA Event Syntax. <http://www.familyhistorydata.parallaxview.co/home/document-structure/event>.

STEMMA Event Constraints. <http://www.familyhistorydata.parallaxview.co/home/document-structure/event/constraints>.