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Subject: Feedback from 1st railML 3.1 Workshop 09./10.01.2018 - intrinsic coordinates

Posted by [christian.rahmig](#) on Wed, 07 Feb 2018 21:18:47 GMT

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Dear RTM colleagues,

on January 9-10, 2018 the first railML 3.1 Workshop took place in Berlin. The aim of this workshop was to collect feedback on the beta version of railML 3.1 that has been released in October 2017. As railML 3.1 is based on RailTopoModel V1.1 (November 2017) one question that has been raised deals with intrinsic coordinates to be forwarded to you:

Intrinsic coordinates are used to define a relative position of a NetEntity between 0 and 1 within the topological network. This attribute is used for all types of locations, e.g. <spotLocation> and <linearLocation>.

Examples in railML 3.1 beta:

```
<levelCrossing id="lcr01" ...>
  <spotLocation id="lcr01_slloc01" netElementRef="ne_x01"
intrinsicCoord="0.6944" applicationDirection="both">
    <linearCoordinate positioningSystemRef="lps01" measure="2.500"/>
  </spotLocation>
</levelCrossing>

<platformEdge id="ple02" ...>
  <linearLocation id="ple02_llloc01">
    <associatedElement netElementRef="ne_a02" intrinsicCoordBegin="0.2"
intrinsicCoordEnd="0.6">
      <linearCoordinateBegin positioningSystemRef="lps01" measure="0.600"/>
      <linearCoordinateEnd positioningSystemRef="lps01" measure="0.700"/>
    </associatedElement>
  </linearLocation>
</platformEdge>
```

The problem:

The intrinsic coordinate is usually not the "leading" positioning information in data base exports. Instead, it is being calculated on the basis of mileage or meter positioning values and thus represents a "derived" value. The conclusion of the discussion was the statement that for the data exchange intrinsic coordinates are not of interest. Instead, it may be calculated by the importing system based on the positioning information from the input. Thus, it was suggested to make the intrinsic coordinate for all NetEntities optional for the data exchange format since the information seems to be redundant. The concept of intrinsic coordinates in general and within internal data models is

not questioned by this discussion.

Questions resulting from the discussion:

- \* Can UIC please provide a more detailed documentation of the whole topic of intrinsic coordinates? Is there something more specific available than in [1]?
- \* What do you think about the proposal above to having intrinsic coordinates in the data exchange scheme only optionally? If considered positively, when will such a modelling change be implemented in RTM (V1.2?)?

[1]

[http://wiki.railtopomodel.org/index.php?title=Object\\_positioning\\_in\\_the\\_network](http://wiki.railtopomodel.org/index.php?title=Object_positioning_in_the_network)

Thank you very much and best regards  
Christian Rahmig

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Subject: Re: Feedback from 1st railML 3.1 Workshop 09./10.01.2018 - intrinsic coordinates

Posted by [Airy Magnien](#) on Thu, 12 Jul 2018 14:58:09 GMT

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Two answers to the two questions :

A1: the wiki does not indeed provide information about the usage of intrinsic coordinates. We'll consider complementing it.

When the linear positioning is known, intrinsic coordinates may be derived from relative linear positioning. When the linear positioning is not known or not available, intrinsic coordinates are necessary to achieve schematic representation.

A2: Intrinsic coordinates have been made optional in RTM 1.1. In the location package, the intrinsic coordinates have been moved from the AssociatedNetElement to a daughter class, the use of which is optional. It is always possible to refer to other positioning systems instead. On the other hand, in the Topology package, the extremities of (linear) NetElements need to be differentiated (disambiguated) in some way. This is why the corresponding intrinsic coordinates (0 and 1) of PositioningNetElements must refer to some coordinate, in the POsitioningSystem package.

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Subject: Re: Feedback from 1st railML 3.1 Workshop 09./10.01.2018 - intrinsic coordinates

Posted by [Felix Prüter](#) on Thu, 23 Aug 2018 09:30:08 GMT

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Airy Magnien wrote on Thu, 12 July 2018 16:58

A2: Intrinsic coordinates have been made optional in RTM 1.1. In the location package, the intrinsic coordinates have been moved from the AssociatedNetElement to a daughter class, the use of which is optional. It is always possible to refer to other positioning systems instead. On the other hand, in the Topology package, the extremities of (linear) NetElements need to be differentiated (disambiguated) in some way. This is why the corresponding intrinsic coordinates (0 and 1) of PositioningNetElements must refer to some coordinate, in the POsitioningSystem package.

I agree with the given argumentation.

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Subject: Re: Feedback from 1st railML 3.1 Workshop 09./10.01.2018 - intrinsic coordinates

Posted by [Airy Magnien](#) on Tue, 04 Sep 2018 09:36:56 GMT

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Basing on the above justification, and after consultation of RTM expert group: no change.

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