
Subject: Reference to PositioningSystem

Posted by [christian.rahmig](#) on Mon, 12 Mar 2018 16:55:29 GMT

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Dear all,

reviewing the current implementation of RTM within railML 3.1 I discovered the following issue where I would like to get your feedback w.r.t. best way of implementation:

In RTM every PositioningNetElement contains at least one AssociatedPositioningSystem. The AssociatedPositioningSystem references a PositioningSystem. In railML 3.1 the matching XML syntax looks like this:

```
<netElement>.<associatedPositioningSystem>@positioningSystemRef
```

Further, an AssociatedPositioningSystem contains at least one IntrinsicCoordinate, which is typically linked with a PositioningSystemCoordinate. Each PositioningSystemCoordinate itself references a PositioningSystem. In railML 3.1 the matching XML syntax looks like this:

```
<associatedPositioningSystem>.<intrinsicCoordinate>.<*coordinate >@positioningSystemRef
```

This way of modelling seems to result in some redundancy w.r.t. referenced positioning system. Therefore, my question I would like to answer together with you: Is it really necessary having the first reference

(<netElement>.<associatedPositioningSystem>@positioningSystemRef) being mandatory? I think that the second reference

(<associatedPositioningSystem>.<intrinsicCoordinate>.<*coordinate >@positioningSystemRef) is sufficient. Therefore, I suggest to either remove the first reference or make it optional in the model. What do you think?

For the sake of completeness, please find here a complete example taken from the railML 3.1 Simple Example [1]:

```
<netElement id="ne_a01">
  <relation ref="nr_a01a02"/>
  <relation ref="nr_a01a03"/>
  <associatedPositioningSystem id="ne_a01_aps01" positioningSystemRef="??">
    <intrinsicCoordinate id="ne_a01_aps01_ic01" intrinsicCoord="0">
      <linearCoordinate positioningSystemRef="lps01" measure="0.0"/>
    </intrinsicCoordinate>
    <intrinsicCoordinate id="ne_a01_aps01_ic02" intrinsicCoord="1">
      <linearCoordinate positioningSystemRef="lps01" measure="500.0"/>
    </intrinsicCoordinate>
  </associatedPositioningSystem>
```

</netElement>

[1] <https://www.railml.org/en/user/exampledata.html>

Best regards
Christian

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