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Subject: [railML2] extension suggestion for the element <state> for open time period

Posted by [Torben Brand](#) on Mon, 08 Mar 2021 10:50:44 GMT

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Background:

The element <state> is part of railML2.4 and is used to define the status of infrastructure pieces with a given time frame for a certain duration. It is a sub-element that can be placed under nearly all infrastructure elements.

Suggestion:

The element <state> should be enhanced to be able to function outside the range of <operatingPeriod>.

In railML2.4, the timeframe for state is defined for days with the usage of @startDate and @endDate in <operatingPeriod> and more refined for the time within those days with the @startTime, @endTime and @endDayOffset in <state> . This model is restricted by:

- The timeframe must be closed. I.e. both @startDate and @endDate in <operatingPeriod> must be used.
- A timeframe of the <timetablePeriod> must be set.
- The timeframe of <operatingPeriod> must be within the timeframe of the <timetablePeriod>.
- The <timetablePeriod> can be as short or as long as required.

This restricts the UC requirements for:

- open time period: only a start date or end date is set
- time period outside the <timetablePeriod> and thus outside the <operatingPeriod>

For more details see document "railML2.4nor Infrastructure Documentation" (<https://www.jernbanedirektoratet.no/railML>), version 1.4, 17.12.2020, point 4.14.

Jernbanedirektoratet suggest adding in railML2.5 the attributes to <state>:

@startDate: First day the stated status is valid for. If no @startTime is set the status is valid from the beginning of the day.

@endDate: Last day the stated status is valid for. If no @endTime is set the status is valid until the end of the day.

Suggestion for syntactic constraint:

@operatingPeriodRef: shall only be used in cases of recurring time periods, e.g. a certain element is closed each Tuesday

What does the community think?

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Subject: Re: [railML2] extension suggestion for the element <state> for open time period

Posted by [christian.rahmig](#) on Fri, 09 Apr 2021 16:05:02 GMT

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Dear Torben,

time aspects in infrastructure states are an important topic indeed. Therefore, I very much appreciate any comments and ideas from the community on our way to identify an appropriate solution.

My proposal: instead of defining single attributes for day and time, let's focus on only two new attributes for a state:

\* @startDateTime (xs:dateTime) to specify begin date AND time for the state

\* @endDateTime (xs:dateTime) to specify end date AND time for the state

xs:dateTime is specified in the pattern: "YYYY-MM-DDThh:mm:ss" (see [1]).

Both attributes shall be optional meeting your requirement of having "open time spans".

I am curious to hear from the community about their ideas...

[1] [https://www.w3schools.com/XML/schema\\_dtypes\\_date.asp](https://www.w3schools.com/XML/schema_dtypes_date.asp)

Best regards

Christian

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Subject: Re: [railML2] extension suggestion for the element <state> for open time period

Posted by [Torben Brand](#) on Thu, 20 May 2021 10:53:08 GMT

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This depend on the UC for the attribute! Our initial request is for open timeframes for an infrastructures state where you cannot reference an <operatingPeriod> (they need to be closed). Here it would make sense to have both date and time together in one attribute as suggested.

But note when you use @operatingPeriodRef for closed timeframes within an <operatingPeriod> or for cyclical day occurrences with the usage of operatingPeriod<operatingDay> these elements do not contain time attributes and are supplemented with the three attributes introduced in railML2.4: <state>@startTime @endTime and @endDayOffset.

If your suggestion is to keep (not deprecating) these three attributes and add new the two attributes @startDateTime and @endDateTime this is fine for us. Note a very clear semantic constraint should be written when to use @startTime and when to use @startDateTime in the wiki.

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Subject: Re: [railML2] extension suggestion for the element <state> for open time period

Posted by [christian.rahmig](#) on Fri, 21 May 2021 11:21:24 GMT

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Dear Torben,

thank you for your feedback. I updated the Trac ticket #394 [1] with a railML 2.5 solution proposal including semantic rules for the different scenarios of usage. The rules are:

- \* use @startDateTime and/or @endDateTime to specify an open or closed timespan for the state's validity that is not linked with an <operatingPeriod>
- \* use @startTime and/or @endTime (and @endDayOffset) to specify an open or closed timespan for the state linked with an <operatingPeriod> where @startDate and/or @endDate are defined

Are these rules sufficient?

[1] <https://trac.railml.org/ticket/394>

Best regards  
Christian

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Subject: Re: [railML2] extension suggestion for the element <state> for open time period

Posted by [Dominik Looser](#) on Mon, 07 Jun 2021 11:37:19 GMT

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Adding the @startDateTime and @endDateTime attributes is a good idea and I agree that @startTime and @endTime should then only be used together with an <operatingPeriod>.

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Subject: Re: [railML2] extension suggestion for the element <state> for open time period

Posted by [christian.rahmig](#) on Fri, 11 Jun 2021 10:00:50 GMT

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Dear Dominik,

thank you for your feedback. I added the proposed semantic rules in the Trac ticket #394 [1] to be added into the wiki documentation of the new attributes. The new attributes will be implemented in the railML 2.5 schema.

[1] <https://trac.railml.org/ticket/394>

Best regards  
Christian

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