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Subject: How to mark the end of a speed restriction?  
Posted by [Christian Rahmig](#) on Thu, 12 Jun 2014 05:30:02 GMT  
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Dear railML users,

brought up by Dirk Bräuer from iRFP we discussed the question: How to model the end of a speed restriction?

The idea was to use the <speedChange> element as follows:

```
<speedChange id="sc7" pos="256.7" vMax="end" dir="up" />
```

The problem resulting from this approach relates to the data type that is used for defining the maximum speed, tSpeed. Currently, it does not support the mix of numeric values with other entries. A quick solution can be to define vMax="-1" as the valid expression for the end of a speed restriction. What is your opinion about this idea?

[1] <https://trac.railml.org/ticket/41>

Best regards

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Christian Rahmig  
railML.infrastructure coordinator

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Subject: Re: How to mark the end of a speed restriction?  
Posted by [Susanne Wunsch railML](#) on Thu, 12 Jun 2014 21:32:15 GMT  
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Hi Christian,

Christian Rahmig <coord@infrastructure.railml.org> writes:

```
>  
> brought up by Dirk Bräuer from iRFP we discussed the question: How to  
> model the end of a speed restriction?  
> The idea was to use the <speedChange> element as follows:  
>  
> <speedChange id="sc7" pos="256.7" vMax="end" dir="up" />  
>  
> The problem resulting from this approach relates to the data type that  
> is used for defining the maximum speed, tSpeed. Currently, it does not  
> support the mix of numeric values with other entries.
```

Why not to enhance this type with an xs:union and restricted xs:string for the xs:enumeration value "end"? It would be the same way, as already done with "rail:tOtherEnumerationValue".

Kind regards...  
Susanne

--

Ingenieurbüro gleisBezug; Susanne Wunsch; +49-351-46927070  
Adresse: Schrammsteinstraße 8; 01309 Dresden; Ust-Id: DE273670238

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Subject: Re: How to mark the end of a speed restriction?  
Posted by [Christian Rahmig](#) on Fri, 20 Jun 2014 05:15:37 GMT  
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Dear Susanne,

Am 12.06.2014 23:32, schrieb Susanne Wunsch:

> [...]  
>  
> Why not to enhance this type with an xs:union and restricted xs:string  
> for the xs:enumeration value "end"? It would be the same way, as already  
> done with "rail:tOtherEnumerationValue".

Thank you very much for your input. And this is how I implemented:  
I introduced a new simple data type "tVMax", which may contain a speed  
value in kmph as well as the string value "end":

```
<xs:simpleType name="tVMax">  
  <xs:union>  
    <xs:simpleType>  
      <xs:restriction base="rail:tSpeedKmPerHour" />  
    </xs:simpleType>  
    <xs:simpleType>  
      <xs:restriction base="xs:string">  
        <xs:pattern value="end" />  
      </xs:restriction>  
    </xs:simpleType>  
  </xs:union>  
</xs:simpleType>
```

The speedChange's attribute @vMax uses this data type.

I hope this solution solves the problem with the undefined maximum speed  
at the end of a temporary speed restriction zone and I appreciate your  
comments about it...

Best regards

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Subject: Re: How to mark the end of a speed restriction?  
Posted by [Susanne Wunsch railML](#) on Fri, 20 Jun 2014 07:03:09 GMT  
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Hi Christian,

Christian Rahmig <coord@infrastructure.railml.org> writes:

```
>  
> <xs:simpleType name="tVMax">  
>   <xs:union>  
>     <xs:simpleType>  
>       <xs:restriction base="rail:tSpeedKmPerHour" />  
>     </xs:simpleType>  
>     <xs:simpleType>  
>       <xs:restriction base="xs:string">  
>         <xs:pattern value="end" />  
>       </xs:restriction>  
>     </xs:simpleType>  
>   </xs:union>  
> </xs:simpleType>  
>  
> The speedChange's attribute @vMax uses this data type.  
>  
> I hope this solution solves the problem with the undefined maximum  
> speed at the end of a temporary speed restriction zone and I  
> appreciate your comments about it...
```

Great!

You have chosen the regular expression option in XML schema. I would admit, that there is another possibility to define the value "end", allowing to comment this value:

```
<xs:enumeration value="end" >  
  <xs:annotation>  
    <xs:documentation>The value 'end' should be used for temporary  
    speed restrictions, otherwise define the next speed aspect.</xs:documentation>  
  </xs:annotation>  
</xs:enumeration>
```

The railML schemas currently use the regular expression method only in cases, where there is no XML schema alternative, e.g. constraining the "other-enumeration-value".

See also <http://stackoverflow.com/questions/13974148/pattern-vs-enumeration-in-schema-xml>

Kind regards...  
Susanne

--

Ingenieurbüro gleisBezug; Susanne Wunsch; +49-351-46927070  
Adresse: Schrammsteinstraße 8; 01309 Dresden; Ust-Id: DE273670238

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Subject: Re: How to mark the end of a speed restriction?  
Posted by [Christian Rahmig](#) on Fri, 20 Jun 2014 09:22:18 GMT  
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Dear Susanne,

Am 20.06.2014 09:03, schrieb Susanne Wunsch:

> [...]  
>  
> You have chosen the regular expression option in XML schema. I would  
> admit, that there is another possibility to define the value "end",  
> allowing to comment this value:  
>  
> <xs:enumeration value="end" >  
> <xs:annotation>  
> <xs:documentation>The value 'end' should be used for temporary  
> speed restrictions, otherwise define the next speed aspect.</xs:documentation>  
> </xs:annotation>  
> </xs:enumeration>  
>  
> The railML schemas currently use the regular expression method only in  
> cases, where there is no XML schema alternative, e.g. constraining the  
> "other-enumeration-value".  
>  
> See also <http://stackoverflow.com/questions/13974148/pattern-vs-enumeration-in-schema-xml>  
>  
> Kind regards...  
> Susanne  
>

thank you very much for your clarification on the topic. Indeed, the  
enumeration solution seems to be better understandable. Therefore I  
implemented it in SVN revision 609.

Best regards

--  
Christian Rahmig

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Subject: Re: How to mark the end of a speed restriction?  
Posted by [Larissa Zhuchyi](#) on Fri, 20 Oct 2023 10:28:46 GMT  
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Dear all

There is a suggestion to deprecate the "end" value of @maxSpeed os <speedSection> in railML3 as it seems to be redundant to linear locations of RailTopoModel. What do you think about this?

In the model of railML2 <speedChange> is a spot element which makes it hard to deal with considering that speed is valid from point A to point B. But then in railML3:

- modelling was improved with the introduction of linear locations of RailTopoModel, i.e. @maxSpeed can be explicitly defined from linearCoordinateBegin to linearCoordinateEnd, or intrinsic ones.
- there is a mechanism to link signals with the beginning and end of a speed section with a corresponding child <refersToBeginOfSpeedSection>

Furthermore, in railML2, this issue (end of a speed restriction) from 2014 seems to intersect with the need for a definition of speed at the beginning or end of a track from 2022 [1].

From what I can see, if the definition of speed change is mandatory at the beginning of a track (let's say not restricted one) and then restriction appears one can probably model an end of a restriction just by defining another change with a value equaling to the beginning. See the example code below.

```
<speedChange id="111" pos="0" dir="up" profileRef="all" vMax="80" signalised="false">
<speedChange id="222" pos="100" dir="up" profileRef="all" vMax="30" signalised="true"> <!--
begining of speed restriction -->
<speedChange id="333" pos="200" dir="up" profileRef="all" vMax="80" signalised="true"> <!--
end of speed restriction -->
```

[1] <https://development.railml.org/railml/version2/-/issues/425>

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