Subject: [railML3] Improvement for railML element „etcsLevelTransition"
Posted by Karl-Friedemann Jerosch on Mon, 31 May 2021 15:52:25 GMT
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With railML 3.2 beta1 (=alpha2 of March 2021) the new element "etcsLevelTransition" required for use case "ETCS Track Net" has been added, modelled as following:

```
<railML>
 <infrastructure>
  <functionalInfrastructure>
   <etcsLevelTransitions>
    <etcsLevelTransition>
      <switchToLevel value="Level 2" lengthOfAcknowledgement="50"/>
      <switchToLevel value="Level NTC 6" lengthOfAcknowledgement="50"/>
      <switchToLevel value="Level 0" lengthOfAcknowledgement="50"/>
     </etcsLevelTransition>
   </etcsLevelTransitions>
  </functionalInfrastructure>
 </infrastructure>
</railML>
```

Improvement 1:
In the current modelling, the sequence of the listed levels in railML provides implicitly the "Table of Priority" according to UNISIG SUBSET-026 (versions 2.3.0/3.4.0/3.6.0) section 5.10.2.3 .
Not strictly considering of the sequence during the export of a railML-file results in an incorrect data file.
To avoid this problem, the suggestion is to add a new attribute "priority" providing explicitly the priority of each level for to the "Table of Priority".

Improvement 2:
The possible entries for attribute "value" consist always of a text part and a non-negative-integer part. To avoid problems during data exchange due to missing syntax requirements for attribute "value" (for example: "ETCS Level NTC 6" or "NTC_6" or "NTC 06" and so on), the suggestion is to divide the information into two attributes:
- attribute "level_kind" to provide the text string with values "level", "level_ntc" and "unknown"
- attribute "value" to provide a non-negative-integer value.

Conclusion:
With improvements 1 and 2 the example will now look like:

```
<railML>
 <infrastructure>
  <functionalInfrastructure>
   <etcsLevelTransitions>
      <switchToLevel level_kind="level" value="2" priority="1" lengthOfAcknowledgement="50"/>
```

```
        <switchToLevel level_kind="level_ntc" value="6" priority="2"
lengthOfAcknowledgement="50"/>
        <switchToLevel level_kind="level" value="0" priority="3" lengthOfAcknowledgement="50"/>
    </etcsLevelTransitions>
   </functionalInfrastructure>
  </infrastructure>
</railML>
```

Note: level_kind="unknown" can be used if the information about the ATP equipment of the neighboring track section is currently missing and will be determined later.

Posted by Joerg von Lingen on Thu, 03 Jun 2021 03:47:31 GMT
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Thanks for the input.

Just one remark: "level_kind" would be better "levelKind" as other attribute names in railML.

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Regards,
Jörg von Lingen - Rollingstock Coordinator