Subject: Infrastructure data for a train path finding tool
Posted by Rüdiger Ebendt on Wed, 29 Jul 2020 12:21:31 GMT
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Hi everyone,

This post is related to two similar posts in railml.infrastructure (see https://www.railml.org/forum/index.php?t=msg&goto=2507, https://www.railml.org/forum/index.php?t=msg&th=747& goto=2508).

Our team would like to base the import interface of a train path finding tool on railML. When adressing this use case, we encountered the problem that it is not entirely obvious to us how to represent some of the concerned data in railML2.4 (more precisely, in the subschema rollingstock).

In the following, I would like to list these pieces of data, and kindly ask the community for suggestions on how to represent them. Respectively, additional comments or sharing of experiences in representing similar data in other use cases, are also greatly appreciated.

The list is (the original German terms are included in square brackets):

- required line category [benötigte Streckenklasse]
- degree of regeneration (of a regenerative brake) [Rückspeisegrad]
- existing tilting mechanism [vorhandene Neigetechnik]: though there is <rollingstock / vehicles / vehicle / wagon / passenger / tilting>, it would probably make more sense if one was able to (simply) refer to a known catalog, e.g. by the Siemens ZUB-no. corresponding to the vehicle equipment (see e.g. https://de.wikipedia.org/wiki/Geschwindigkeits%C3%BCberwachung_f%C3%BCr_NeiTech-Z%C3%BCge#Fahrzeuge) instead of specifying all attributes of the tilting mechanism.

Many thanks in advance for your help!

Kind regards
Ruediger Ebendt

Subject: Re: Infrastructure data for a train path finding tool
Posted by on Thu, 13 Aug 2020 09:25:50 GMT
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Dear Rüdiger,

here are some remarks from our experience on your questions

> - required line category [benötigte Streckenklasse]

The link between a so-called line category (A, B1, B2 etc.) and the physical properties which lead to the assignment of a line category is not limited to single vehicles. For instance, the Rule (Ril)

491.9104 of Deutsche Bahn assigns single vehicles of classes 344..346 to category A, while multiple vehicles of that classes are B2. Also, there are some national extensions of line category existing in some countries (CE, CM2 ff. in Germany, while there is no E or F). So the assignment of vehicles to line categories is a national one (or may be even one per IM).

That's why railML, so far, does only provide the physical background properties (axle load, length, mass) of vehicles but cannot provide assignments to line categories. It is the task of the reading software to find out the line categories by combinations of vehicles and their physical properties.

> - degree of regeneration (of a regenerative brake) [Rückspeisegrad]

....depends on the electrical infrastructure and current load of the electrical network (size of supply sections, other trains running in it) and therefore can only be found out dynamically - not a given fixed value.

> - existing tilting mechanism [vorhandene Neigetechnik]:
> though there is <rollingstock / vehicles / vehicle / wagon /
> passenger / tilting>, it would probably make more sense if
> one was able to (simply) refer to a known catalog, e.g. by
> the Siemens ZUB-no. corresponding to the vehicle equipment

What you are referring to are train protecting systems, not tilting mechanisms. In Germany, tilting is linked to continuous speed supervision (=train protecting) by law. But this does not fit generally to all countries. So, again: RailML defines the physical background; it is up to the reading software to link the physical background to certain (local, depending on application) technical devices.

With best regards,
Dirk.

Subject: Re: Infrastructure data for a train path finding tool
Posted by Rüdiger Ebendt on Mon, 21 Sep 2020 15:23:46 GMT
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Dear Dirk,

sorry for my late reply (I had been on holiday soon after posting). I would like to thank you for your detailed answer (and also for your answers to the related two posts in the infrastructure forum). Your answers and comments have been very helpful!

Best regards,

Ruediger
