
Subject: speedProfile and rolling stock

Posted by [Torben Brand](#) on Mon, 04 Jun 2018 13:11:50 GMT

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We need to map which <speedProfile> (<https://wiki.railml.org/index.php?title=IS:speedProfile>) the rolling stock can run under. This either or both for the individual vehicle or the whole formation.

It is today possible to define the properties of a speedProfile (like for instance tilting properties) and the same properties in the rolling stock. Those properties then could be mapped by the railML reading tool. The problem here is that not always are the properties mapped and more important the speedProfile is specifically assigned to a vehicle after a running capability test. So, it might be that a vehicle fulfils the criteria, but for railML unknown reasons is not qualified for the speedProfile.

A rolling stock can run under one or more speedProfile. In case the speedProfile under the infrastructure schema is in the same file it should be referenced by it's @id. But usually the two schemas are in separate files so the corresponding speedProfile should be referenced by it's @name attribute.

If no speedProfile is mapped under rolling stock the vehicle/formation can run under all defined speedProfiles?

How do you think this should be mapped? And would it be possible to be added still in railML2.4RS? If not we need to make an extension.

Subject: Re: speedProfile and rolling stock

Posted by [Torben Brand](#) on Fri, 08 Jun 2018 12:57:57 GMT

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As I so far have gotten no feedback from the community I will allow me to give a solution suggestion.

Please add the following new (in blue) optional elements and attributes to railML2.4RS:

<vehicle><speedProfileRef>

@ref="corresponding id in <infrastructure/speedProfile>in the same file" of type id and optional
@name="corresponding name in <infrastructure/speedProfile>in another file" of type string and optional

Usually the lowest common denominator of the combination of vehicles will determine the speedProfile of the formation. But the formation can also reduce/determine the speedProfile in its own right. Setting the speedProfile in the formation is also necessary when not modelling the wagons as vehicles, but as just as increased weight, length and lower speed than the vehicle attached. So the same extension must be attached under formation.

<formation><speedProfileRef>

@ref="corresponding id in <infrastructure/speedProfile> in the same file" of type id and optional
@name="corresponding name in <infrastructure/speedProfile> in another file" of type string and optional

Subject: Re: speedProfile and rolling stock
Posted by on Tue, 12 Jun 2018 16:20:16 GMT
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Dear Torben,

I understand that you want to link speedProfiles with vehicles in railML. However, so far, the link between speedProfiles and vehicles has been seen by trains only, not directly. That's why there is a reference to a <speedProfile> from a <trainPart> but not from a <vehicle>.

From the current point of view, only the train determines which speedProfile its vehicles use. Without a train, the vehicles don't "know" about speedProfiles. For instance, an ICE-T (with tilting technology) is ready to run with or without increased tilting speeds. Only the actual planned train = timetable decides whether it uses tilting or not. A hybrid engine (Diesel+battery) is ready to run with Diesel or battery, only the timetable decides which is actually planned a.s.o.

I understand that you may want to encode the possible links between speedProfiles and vehicles _without_ having a timetable. And I have no objection against it in general.

However, please consider that this leads to a possible redundancy: In case there is a timetable in the railML file, there is possibly the already existing reference from <trainPart> to <speedProfile> and/or a future reference from <vehicle> to <speedProfile>.

Which one should be used?

Can I assume that my railML file is still valid when I have a <trainPart> referencing a <speedProfile> and a <vehicle>, but the vehicle does not reference the <speedProfile>? This should not lead to a conflict.

So, when extending the schemes in the suggested way, please keep in mind clarifying a distinct usage at least in Wiki.

With best regards,
Dirk.

Am 08.06.2018 um 14:57 schrieb Torben Brand:

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>
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 > @name="corresponding name in <infrastructure/speedProfile>in
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 > the vehicle attached. So the same extension must be attached
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 > <formation><speedProfileRef>
 > @ref="corresponding id in <infrastructure/speedProfile> in
 > the same file" of type id and optional
 > @name="corresponding name in <infrastructure/speedProfile>
 > in another file" of type string and optional
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Subject: Re: speedProfile and rolling stock
 Posted by [Torben Brand](#) on Mon, 02 Jul 2018 10:26:51 GMT
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Thank you, Dirk, for valuable input and good questions.

It did not occur to me to consider the timetable schema. As I was just thinking of the capability of the rolling stock. So, thank you for pointing that out to me. As I wrote the extension is meant to describe the speedProfile(s) that the formation or vehicle can run on. Which speedProfile it will run on raises a few more questions. I have grouped these questions in four chapters:

- A Hierarchy between redundant information in different schemas (this issue)
- B Hierarchy of the speedprofiles. See reply to issue #368 and ref to issue #1643
- C National vs. Generic speed profiles. See also reply to issue #368 (https://www.railml.org/forum/index.php?t=msg&goto=526&am p;&srch=speedProfile#msg_526)
- D Use of @etcsTrainCategory. See issue #1655 (https://www.railml.org/forum/index.php?t=msg&goto=1698&a mp;&srch=etcsTrainCategory#msg_1698) and extension suggestion below.

A- Hierarchy between redundant information in different schemas

I suggest to be the hierarchy:

1. If a timetable schema is present/used and the speedProfileRef(s) are defined there: use one of the defined SpeedProfile(s) in the TT. If there are more than one speedProfile defined, see see

discussion in chapter B about which one to choose (is defined in infrastructure). The speedProfileRef(s) in the TT should be consistent with part of or all of the same speedProfileRef(s) being present for the same formation or vehicle in the rolling stock schema if written there. If TT refers to a speedProfile that is not referred to in the RS for the same formation the dataset is considered to be in different planning stages and is thus NOT considered invalid.

2. If a timetable schema is NOT present/used or it is present, but the speedProfileRef is NOT defined there and a speedProfileRef is available in rolling stock schema: use one of the defined SpeedProfile(s) in the RS. If there are more than one speedProfile defined, see discussion in chapter B about which one to choose (is defined in infrastructure).

3. If no TT or RS schema is present/used or none of them contain a speedProfileRef, the correct speedProfile is today not defined/it is unclear which one to be used. This as a default in the infrastructure schema defined SpeedProfiles is not definable today. See discussion in chapter B about which one to choose (is defined in infrastructure).

In general TT taking precedence/detailing further the use of parameters set in RS, seems to be the case for a lot of parameters. Like under <formationTT> you can change the weight, length and speed of a formation. In <equipment> you can turn on or off equipment defined in rolling stock and in <passengerUsage> you can define which places and service are in use. So there seems to be a general rule in railML that timetable can be a more detailed specification of the rolling stock than is defined in the rolling stock schema/railML file. There should be a general definition about this in both the rollingstock wiki and the timetable wiki. I see both descriptions (RS/TT) as optional and if present in both schemas, TT takes precedence. So railML files with timetable/trains/train/trainPartSequence/speedProfileRef is always valid railML independent if rollingStock/formation/speedProfileRef or rollingStock/vehicle/speedProfileRef is set.

As vehicles are approved for one or more specific national speedProfile(s) I suggest to map to those. But in addition to the national mapping we need to do an international mapping as the @etcsTrainCategory has been introduced (as defined in <speedChange> under <infrastructure> , Should be moved to <speedProfile>). This to know which other speedProfile(s), not specified explicitly, a train could potentially run under (in another nation for instance). As the @etcsTrainCategory contains all potential categories in its value, the attribute cannot be placed under the specific speedprofiles, but be placed higher in the hierarchy as it is valid for all speedprofiles (it defines).

So I extend my extension request to be:

```
<rollingStock>
<vehicle @etcsTrainCategory="value(s) as defined in issue #1655">
<speedProfileRef @ref="corresponding id in <infrastructure/speedProfile>in the same file" of type
id and optional
@name="corresponding name in <infrastructure/speedProfile>in another file" of type string and
optional>
```

```
<rollingStock>
<formation @etcsTrainCategory="value(s) as defined in issue #1655">
<speedProfileRef @ref="corresponding id in <infrastructure/speedProfile>in the same file" of type
id and optional
@name="corresponding name in <infrastructure/speedProfile>in another file" of type string and
optional>
```

If a train can drive on more than one speedProfile map all capable speedprofiles by using multiple <speedProfileRef> elements. See discussion in chapter B about which one to choose (is defined in infrastructure).

See issue #1655 for example based on my suggestion.

Subject: Re: speedProfile and rolling stock
Posted by [Joerg von Lingen](#) on Fri, 03 Aug 2018 03:21:59 GMT
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Dear all,

Concerning proposed speed profiles in RS:

I don't see the need to have speed profiles for single vehicles. It is always intended to use formations for use as

"running rolling stock" like for TT.

Thus it would be sufficient to have this information at the formation element only. The additional element can only be optional, otherwise it won't be compatible with 2.3.

Concerning hierarchy of "duplicate" information in different subschema:

With the example speed profile the priority would be in TT except the formation or track allows only a more restrictive profile. Thus in the basic definition of speed profiles in IS a priority level for fallback shall be included or can be possibly concluded.

In any case it has to be defined which reference information prevail, if ref and name are given but contradictory. I would suggest the name.

Regards,
Dr.-Ing. Jörg von Lingen - Rollingstock scheme coordinator

Subject: Re: speedProfile and rolling stock
Posted by [Joerg von Lingen](#) on Tue, 07 Aug 2018 06:15:22 GMT
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see changeset [811] (<https://trac.railml.org/changeset/811/railML>) and ticket #335 (<https://trac.railml.org/ticket/336>)

solved for formation

Regards,

