Subject: Definition of track/stoppingPlace/platform infrastructure vs. timetable
Posted by Stefan Hubrig on Wed, 02 Oct 2019 15:00:21 GMT

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Dear all,

I stumbled over the definition of the <track> in infrastructure:

<xs:documentation>A Track is defined by a railway section between two switches/crossings or between a switch/crossing and a buffer stop.</xs:documentation>

Does this definition cover tracks in the context of timetables? For those, we would want to describe where the train stops inside an operationalPoint. In that case, there would be a single line track through many operationalPoints since there is no switch. What would <track> <length> refer to?

If <track> is not the right fit here, what would we choose instead?

For most timetable applications it is sufficient to know on which "track" of the operational point the train will stop (or pass). But a more specific description could be either of:
• stoppingPosition (currently not in railML)
Describes where the front of the train stops
important parameters for compatibility with a train: train type/category, direction

• stoppingPlace
Refers to the train stop position with the length
important parameters for compatibility with a train: train type/category, direction, train length

• platform
Important for passenger trains.

So what do we choose when the meaning of <track> in infrastructure is something different? More generally, when do we use track, platform or stoppingPlace?

Best regards,
Stefan Hubrig

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Nielsen

Subject: Re: Definition of track/stoppingPlace/platform infrastructure vs. timetable
Posted by christian.rahmig on Mon, 07 Oct 2019 18:28:17 GMT
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Dear Stefan,

thank you for your contribution on the question "What is a track?".

Am 02.10.2019 um 17:00 schrieb Stefan Hubrig:
> [...]
> <xs:documentation>A Track is defined by a railway section
> between two switches/crossings or between a switch/crossing
> and a buffer stop.</xs:documentation>
>
> Does this definition cover tracks in the context of
> timetables? For those, we would want to describe where the
> train stops inside an operationalPoint. In that case, there
> would be a single line track through many operationalPoints
> since there is no switch. What would <track> <length> refer
> to?
>
> If <track> is not the right fit here, what would we choose
> instead?

Following several talks with different railML users and contributors I
can agree that the current definition of a railML <track> seems to be
too strict for certain applications/use cases. There are scenarios like
yours with very long tracks that span over several operational points
and connected switches. On the other side, there are scenarios with very
short tracks or "track sections". In both cases, the constraint that
tracks range from switch/crossing/buffer stop until
switch/crossing/buffer stop, does not match.

My question to the whole community:
Would you like to modify the definition of a railML <track> by removing
the constraints?

How to continue then? Is there an optimal definition of a <track>? Here
is my proposal:
There may be a hierarchy of <track> elements: A very short <track>

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section may refer to a longer parent <track> via the attribute
@belongsToParent. And this longer <track> may refer to a very long
parent <track> spanning over several operational points again via the
attribute @belongsToParent.

The advantage of this approach: we are able to model all kind of tracks
- from very short to very long. The disadvantage: more freedom on the
model requires more constraints on the use case side in order to
guarantee compatibility of export and import interfaces. In particular,
each use case shall define what kind of <track> elements it expects.

Dear community, how do you like this proposal?

> For most timetable applications it is sufficient to know on
> which "track" of the operational point the train will stop
> (or pass). But a more specific description could be either
> of:
> •   stoppingPosition (currently not in railML) Describes where the
> front of the train stops
> important parameters for compatibility with a train: train
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>
> •   stoppingPlace
> Refers to the train stop position with the length
> important parameters for compatibility with a train: train
> type/category, direction, train length
>
> •   platform
> Important for passenger trains.
>
> So what do we choose when the meaning of <track> in
> infrastructure is something different? More generally, when
> do we use track, platform or stoppingPlace?

Sorry, but I did not get the difference between a "stoppingPosition" and
a "stoppingPlace". railML 3.1 already knows the <stoppingPlace> element,
which defines the place where trains may stop (with their head).
Further, you may define the stop post panel by using the <signal>
element with child element <isStopPost>.

The <platform> element is relevant for use cases related to the exchange
of passengers in a station. For example, the height of a platform edge
may be relevant for evaluating the access of the train with wheel
chairs. Another example may be the side of the platform edge in relation
to the orientation of the track in order to tell the passengers the
right side of exit. To cut the story short: the choice between elements
<platform>, <track> and <stoppingPlace> depends on the use case specific
requirements. The railML data model provides the syntax for all

different solutions.

Best regards
Christian

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Subject: Re: Definition of track/stoppingPlace/platform infrastructure vs. timetable
Posted by christian.rahmig on Thu, 07 Nov 2019 13:33:03 GMT
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christian.rahmig wrote on Mon, 07 October 2019 20:28Dear Stefan,

thank you for your contribution on the question "What is a track?".

Am 02.10.2019 um 17:00 schrieb Stefan Hubrig:
> [...]
> <xs:documentation>A Track is defined by a railway section
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My question to the whole community:
Would you like to modify the definition of a railML <track> by removing
the constraints?

In order not to forget about this issue to be solved with railML 3.2 I created Trac ticket #368, see https://trac.railml.org/ticket/368. Still, I would like to hear your opinion about the best definition of a track.

Thank you very much and best regards
Christian

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Subject: Re: Definition of track/stoppingPlace/platform infrastructure vs. timetable
Posted by Thomas Langkamm on Fri, 13 Dec 2019 14:16:46 GMT
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We had some discussions in the SCTP groups regarding the track definition, and agree that we should have no hard restriction regarding the end of the track. We do want to allow "long tracks" that extend over several operational points.

Thus, we suggest to change the definition to "A track is a railway section that can be traversed by a train in a continuous motion."

Additional documentation in the wiki could be:
A track may contain switches and signals. A track is an object with a mandatory type and optional attributes, typically a name, a main direction and a reference to an infrastructure manager. It may also have an associated linear positioning system (kilometrization). A track may be defined locally, where tracks start and end at buffer stops, switches, signals or the boundaries of an operation point, or globally, where tracks may continue over long distances and contain switches.

And to elaborate further, here's something for best practices:
In a microscopic model, a track is typically defined on one netElement or on a collection of netElements. If a track is defined as a collection of netElements, they must be connected and circle free in a graph theoretical sense.

We have discussed whether we should give a more restrictive definition but found use cases we might not have an infrastructure element at all, for example in a timetable environment where we care only about tracks and not about switches or signals.

Subject: Re: Definition of track/stoppingPlace/platform infrastructure vs. timetable
Posted by Stefan Hubrig on Thu, 02 Jul 2020 05:56:28 GMT
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I appreciate the new definition of the track.
Also I've seen that the stoppingPosition exists as signal with "isStopPost".

So what is the definition of the stopPost? I suppose: This the the point location where the head of the train is supposed to stop.

Then a stoppingPlace can be referred. In my opinion these detailed defnitions are especially useful, when I want to point out, that there can be e.g. one long or two short trains, that can stop at the track at the same time.

In the latter case, I'd expect two stopPosts on the track at different locations.

So, I think, one question remains: Is there only one stoppingPlace for each stopPost (with maximum length) or shall there be two stoppingPlaces, so either a long or a short train is expected to stop there.
Thanks & Best regards,
Stefan Hubrig