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Subject: Semantic Constraints for Train Section

Posted by [David Lichti](#) on Mon, 30 Jan 2023 07:22:02 GMT

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Dear TT-Community,

There currently are two proposals for semantic constraints on operational and commercial train sections, and their relation to itineraries. The goal of these constraints is prohibit overlaps and gaps in the way sections cover their parent variant's itinerary.

Disjoint Sections

Semantic constraints TT:004 and TT:006 are about pairwise overlaps of train sections in their itinerary. The itinerary is defined by the parent train variant. But it may be subdivided into several sections. These sections must not overlap.

I suggest the following wording:

TT:004.

The itinerary sections of an `operationalTrainVariant`, defined by the `operationalTrainSections` and their respective ranges, must be pairwise disjoint, except for their respective first and last `baseItineraryPoints`.

(Replace `operational` by `commercial` for commercial train sections.)

Itinerary Coverage

These constraints are complemented by TT:005 and TT:007, which are about the coverage completeness of these sections. While the constraint above prohibits overlaps between sections, the following constraint prohibits gaps in the coverage of the variant's itinerary.

I suggest the following wording:

TT:005.

The first(last) `baseItineraryPoint` of each `operationalTrainSection` within an `operationalTrainVariant` must either be the referenced itinerary's first(last) base point, or coincide with another section's last(first) base point.

(Replace `operational` by `commercial` for commercial train sections.)

Best Regards

David Lichti

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Subject: Re: Semantic Constraints for Train Section

Posted by [Milan Wölke](#) on Mon, 06 Feb 2023 07:44:57 GMT

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Hi David,

thanks for the suggestions. From my point of view they sound pretty clear. I dont think they could be misunderstood.

Best regards, Milan

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Subject: Re: Semantic Constraints for Train Section  
Posted by [Milan Wölke](#) on Wed, 22 Feb 2023 14:33:09 GMT  
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Hi all,

in another discussion among the timetable developer group, we found that the semantic constraints would need to be restricted to allow for overlapping in certain scenarios. We found that overlapping would need to be allowed for cancellations as well as for on-request trains. This would apply for both, commercial and operational train sections.

The reasoning behind this is that if a section of a variant is cancelled, it should be possible to describe the replacement. That replacement would then overlap with the cancelled section.

Similarly, it should be possible to describe multiple on-request train sections that could be run if requested.

However the developer group also agreed that a semantic constraint would make sense if those exceptions would be made. That would mean, that the above wording proposals would need to be adapted:

Quote:

The itinerary sections of an `operationalTrainVariant`, defined by the `operationalTrainSections` and their respective ranges, that are not cancelled and not marked as `onRequest`, must be pairwise disjoint, except for their respective first and last `baseItineraryPoints`.

The second proposed rule, from my point of view, still applies.

Quote:

The first(last) `baseItineraryPoint` of each `operationalTrainSection` within an `operationalTrainVariant` must either be the referenced itinerary's first(last) base point, or coincide with another section's last(first) base point.

What are your thoughts on this. Do you see other scenarios, where these proposed semantic constraints would pose a problem?

Thanks in advance for your contribution.

Best regards, Milan

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Subject: Re: Semantic Constraints for Train Section  
Posted by [Milan Wölke](#) on Mon, 13 Mar 2023 14:56:39 GMT  
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Hi all,

in the last timetable developer meeting it was decided to accept the semantic constraints presented here.

Here some links to the semantic constraints in the wiki:

<https://wiki3.railml.org/wiki/TT:operationalTrainSection#TT:004>

<https://wiki3.railml.org/wiki/TT:operationalTrainSection#TT:005>

<https://wiki3.railml.org/wiki/TT:commercialTrainSection#TT:006>

<https://wiki3.railml.org/wiki/TT:commercialTrainSection#TT:007>

Best regards, Milan

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