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Subject: NetElements vs. Tracks vs. TrainDetectionElements vs. TvdSections  
Posted by [Fabiana Diotalle](#) on Thu, 25 Oct 2018 15:08:20 GMT

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Hello everybody,

since I'm new to RailML community I'll briefly introduce myself: I'm Fabiana Diotalle from NEAT ([www.neat.it](http://www.neat.it)), an Italian design and development company, with solid experience in creating HW&SW solutions for mission and safety critical applications.

At the moment we are developing a tool for drawing and visualizing fully equipped railway track plans, and for easily editing, checking and importing and/or exporting the relative objects properties in different formats (among which, of course, railML).

I have read the documentation regarding the Infrastructure and the Interlocking Scheme, and I have some doubts on how to link the trackCircuit xml representation between the Infrastructure and Interlocking Scheme.

Consider for example the situation depicted in the attached figure: my goal is to find the correct representation of the netElements, the tracks, the trainDetectionElements (Infrastructure Scheme) and the TvDSection (Interlocking Scheme) of this very unrealistic case study.

In the figure there are 6 trackcircuits, delimited by 5 joints. The trackcircuits (in the real world) are composed by the the following segments:

- TC01 = a
- TC02 = b+c+e
- TC03 = d
- TC04= f+h+i
- TC05 = g
- TC06 = l

According to what I understood reading the railML documentation, the 6 trackcircuits correspond the 6 TvdSections in the Interlocking Scheme, is this correct?

Another point I would like you to confirm me, is that, if I have only one operational point, in the Infrastructure scheme the netElement representation corresponds to the Track representation.

In particular, I would say that the netElements and tracks representation of this case study should be the following:

- trc01 = ne\_01 = a+b
- trc02 = ne\_02 = c+d
- trc03 = ne\_03 = e+f
- trc04 = ne\_04 = g+h
- trc05 = ne\_05 = i+l

For what concerns the limiting joints , they should be represented in the following way as trainDetectionElements:

- J1 = tde01 => netElementRef="ne\_a01"
- J2 = tde02 => netElementRef="ne\_a02"
- J3 = tde03 => netElementRef="ne\_a03"
- J4 = tde04 => netElementRef="ne\_a04"
- J5 = tde05 => netElementRef="ne\_a05"

Finally, for the TvdSection we should have:

- Tvd01 = TC01 -> DemarcatingTraindetector ="j1"
- Tvd02 = TC02-> DemarcatingTraindetector ="j1", "j2", "j3"
- Tvd03 = TC03-> DemarcatingTraindetector ="j2"
- Tvd04= TC04-> DemarcatingTraindetector ="j3","j4","j5"
- Tvd05 = TC05-> DemarcatingTraindetector ="j4"
- Tvd06 = TC06-> DemarcatingTraindetector ="j5"

Is all of this correct?

Thanks in advance for your feedback,

Fabiana

## File Attachments

1) [railML\\_case\\_study.png](#), downloaded 605 times

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Subject: Re: NetElements vs. Tracks vs. TrainDetectionElements vs. TvdSections  
Posted by [christian.rahmig](#) on Fri, 02 Nov 2018 15:31:38 GMT

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Dear Fabiana,

Am 25.10.2018 um 17:08 schrieb Fabiana Diotallevi:

- > Hello everybody,
- > since I'm new to RailML community I'll briefly introduce
- > myself: I'm Fabiana Diotallevi from NEAT ([www.neat.it](http://www.neat.it)), an
- > Italian design and development company, with solid
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- > visualizing fully equipped railway track plans, and for
- > easily editing, checking and importing and/or exporting the
- > relative objects properties in different formats (among
- > which, of course, railML).

Welcome to the railML forum! I am looking forward to learn more about your visualization application, because it relates to one of our first railML 3 use cases: Schematic Track Plan (see [1]). So, if you are going to attend the upcoming railML conference (14.11.2018) [2] and railML 3.1 Dissemination workshop (13.11.2018) [3] in Praha, we may discuss in detail.

- > I have read the documentation regarding the Infrastructure
- > and the Interlocking Scheme, and I have some doubts on how
- > to link the trackCircuit xml representation between the
- > Infrastructure and Interlocking Scheme.
- > Consider for example the situation depicted in the attached
- > figure: my goal is to find the correct representation of the
- > netElements, the tracks, the trainDetectionElements
- > (Infrastructure Scheme) and the TvDSection (Interlocking
- > Scheme) of this very unrealistic case study.
- >
- > In the figure there are 6 trackcircuits, delimited by 5
- > joints. The trackcircuits (in the real world) are composed
- > by the the following segments:
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- > • TC01 = a
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- >
- > According to what I understood reading the railML
- > documentation, the 6 trackcircuits correspond the 6
- > TvdSections in the Interlocking Scheme, is this correct?

That is correct.

- > Another point I would like you to confirm me, is that, if I
- > have only one operational point, in the Infrastructure
- > scheme the netElement representation corresponds to the
- > Track representation.

NetElements are topology elements and thus independent from "railway typical" tracks and lines. The <line> as well as the <track> is located as NetEntity on the underlying topology (NetElement).

- > In particular, I would say that the netElements and tracks
- > representation of this case study should be the following:
- >
- > • trc01 = ne\_01 = a+b
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- > • trc03 = ne\_03 = e+f

> • trc04 = ne\_04 = g+h  
> • trc05 = ne\_05 = i+l

Yes, this approach is possible. In this specific microscopic model, the location of the <track> corresponds with the <netElement>.

> For what concerns the limiting joints , they should be  
> represented in the following way as trainDetectionElements:  
>  
> • J1 = tde01 => netElementRef="ne\_a01"  
> • J2 = tde02 => netElementRef="ne\_a02"  
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You mean "ne\_01" instead of "ne\_a01", don't you?

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> • Tvd06 = TC06-> DemarcatingTraindetector ="j5"  
>  
> Is all of this correct?

Yes, this is correct :-)

I am not sure whether the buffer points have to be added as demarcating points of TvdSections, too, but I am sure the interlocking coordinator can answer this remaining question quite fast...

[1] [https://wiki.railml.org/index.php?title=UC:IS:Schematic\\_Track\\_Plan](https://wiki.railml.org/index.php?title=UC:IS:Schematic_Track_Plan)

[2] <https://www.railml.org/en/event-reader/34th-railml-conference.html>

[3] <https://www.railml.org/en/event-reader/3rd-railml-3-beta-feedback-workshop.html>

Best regards  
Christian

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Christian Rahmig - Infrastructure scheme coordinator  
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Altplauen 19h; 01187 Dresden; Germany [www.railml.org](http://www.railml.org)

Dear Fabiana,

Christian Rahmig wrote on 02.11.2018 16:31:

> Dear Fabiana,

>

> Am 25.10.2018 um 17:08 schrieb Fabiana Diotallevi:

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>> • Tvd05 = TC05-> DemarcatingTraindetector ="j4"  
>> • Tvd06 = TC06-> DemarcatingTraindetector ="j5"  
>>

>> Is all of this correct?

Yes, the TVD sections are correct w.r.t. rail joints. In addition the sections Tvd01, Tvd03, Tvd05, Tvd06 shall have DemarcatingBufferstop as each section has at least two ends.

Regards,  
Jörg von Lingen - Interlocking scheme coordinator

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Subject: Re: NetElements vs. Tracks vs. TrainDetectionElements vs. TvdSections  
Posted by [Fabiana Diotallevi](#) on Mon, 05 Nov 2018 14:16:53 GMT

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Dear Christian,  
thanks a lot for your reply.  
I'll be in Prague the evening of the 13rd, the 14th and the 15th, so we will surely have the chance to discuss in more detail.

Best regards,  
Fabiana

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