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Subject: Re: railML 3.2: Additional information for travel paths in a macroscopic netElement

Posted by \_\_\_\_\_ on Wed, 09 Mar 2022 17:13:36 GMT

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Dear Thomas,

as I wrote: "may be I misunderstood the main point".

And, I do not need to be convinced about the necessity of a Change-of-direction-information in general.

It seems that I misunderstood your problem because

- I assumed that infrastructure can always be microscopic if necessary and that
- for some reason you do not take a microscope into account as a solution.

(There is of course no strict border between macro- and microscopic models. In this sense here, a macroscopic model is one with rather no points/switches as linking elements (nodes). A microscopic model is one with rather all points/switches as linking elements (nodes).)

So, can we agree that in general, there is already a solution for your problem: Use a microscopic model of infrastructure!

Don't worry, Thomas, I am also a friend of macroscopic models especially in conjunction with timetables. So, in case I am right with that assumptions, we can try to find a way to encode direction information in macroscopic infrastructure models.

In my view, this would have to be matrix for each (macroscopic) junction of the network. (A "macroscopic junction" is a node with more than two edges, so either a station or a junction with at least one branch line.)

Such a matrix for each macroscopic junction would have all incoming and outgoing tracks or lines of the junction as rows and columns.

In each cell of the matrix a Boolean information would be written: Change of Direction = yes or no. So, a software can read from the matrix for each combination of from-where (incoming) to-where (outgoing) a Change of Direction would be necessary.

Example for station Lillestrøm:

GO: Gardermobanen from/to Oslo  
GL: Gardermobanen from/to Lufthavn  
HS: Hovedbanen from/to Strømmen  
HL: Hovedbanen from/to Leirsund  
KF: Kongsvingerbanen from/to Fetsund

GO GL HS HL KF  
GO x - x - -  
GL - x - x x

HS x - x - -  
HL - x - x x  
KF - x - x x

x = Change of Direction = yes  
- = no Change of Direction

The main diagonal is normally set to "Change of Direction" except for stations with turning loops. The halves above and below the main diagonal are normally symmetrical except for some strange stations with one-way triangles or such.

So, Thomas, if such matrices in <infrastructure> would be a solution for your problem, I would like to support this solution.

I would recommend to make one of such matrix as an optional sub-element of an <ocp> or similar object in railML3. The rows and columns should be line-IDs or track-IDs.

But first, in general, we need to make the decision whether to support a redundancy where a microscopic model is already a solution at all.

Hope I didn't miss the point,  
with best regards,  
Dirk from Dresden.

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