Subject: [railML3] Need to specify "Stock rail joint" as position point for switch
Posted by Morten Johansen on Thu, 08 Sep 2022 12:49:52 GMT
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The Norwegian railway traditionally uses the "stock rail joint" as position point when dealing with switches as spot objects. The linear position of switches has been based on "stock rail joint" both in document based documentation and in ICT systems up to now.

As there is no value expressing "stock rail point" int the value set for @referencePont today, and @referencePoint is as mandatory attribute (ref. railML3 wiki) we have a challenge in beeing able to export our infrastructure data in the railML3.2 format.

There is another aspect that in newer ICT systems like ETCS and modern systems for analyzing maintenance needs etc, switches are required to be positioned at the "tongue tip". This means that we need to be able to give information on which position point is used as position point for a given switch if it is either on the "stock rail joint" or the "tongue tip".

As as ICT-system importing a railML file not necessarily use the same position point as the system creating the file as an export, we in addition need to be able to give the distance between the "stock rail joint" and the "tongue tip".

On possible solution to our needs could be to define and reserve the @referencePoint value switchBegin to mean "tongue tip", as that is the point where the deviating track starts, and make a new legal value eg. stockRailPoint for the position point "stock rail point". The length from the "stock rail point" to the "tongue tip" could be given as a new attribute eg. @"enteringLength" or sth.

Is this a challenge also for other infrastructure managers?

Subject: Re: [railML3] Need to specify "Stock rail joint" as position point for switch
Posted by christian.rahmig on Tue, 17 Jan 2023 19:19:01 GMT
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Dear Morten, dear all,

thank you very much for your thoughts about the practical usage of the switch reference point.

The current solution implemented with railML 3.2 foresees only two possible switch reference points: the switch begin and the switch center. This approach is rather simple and does not consider the fact that e.g. "switch begin" can be understood in different ways.

In reality, there is a mathematical switch begin given by the (virtual) point, where the branching radius starts. There is the (physical) point, where the switch tongues start. There exists the point, where the

physical switch is welded with the rails etc. The spatial difference between these different "switch begin points" is usually not very big, but depending on the use case, this distance can make a difference and should be considered in the modelling approach.

How to solve this situation? I suggest to collect all the different switch reference points needed for various use cases and define them in an unambiguous way. In the second step, let's match each of the points with the appropriate view of the switch element (physical switch, functional switch, topological switch...). In the third step, let's think about how and where to add missing information about the different switch reference points in the railML 3 data model.

During this process, please let us always consider an importer view, too: It might be easy for an exporting tool to define (and export) various switch reference points, but the importing tool need to understand them all and convert the information correctly.

What do you think about this approach?

Best regards
Christian
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Am 08.09.2022 um 14:49 schrieb Morten Johansen:
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