Subject: [railML3] Restricting aggregation of RailTopoModel
Posted by Larissa Zhuchyi on Mon, 29 Apr 2024 15:13:15 GMT
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Dear all

railML.org suggests to introduce new semantic constrains to make aggregation model less ambiguous and easy to read. Please review the suggested semantic constrains IS:008, IS:009 and IS:011 and provide your comments.

All the three semantic constrains seem to be imposed by RailTopoModel and can not be implemented in XSD, which is consistent with the guidelines on the introduction of semantic constrains of railML.org [1]. Furthermore they occurred in the example data provided by the railML.org partners.

Suggested semantic IS:008 constraint for railML3.
Aggregation of net elements should follow the tree data structure. See figure [2]. This means that no two (mesoscopic) net elements can aggregate same (microscopic) net element. In other words, (microscopic) net element can be aggregated by at most one (mesoscopic) net element.

Suggested semantic IS:009 constraint for railML3.
Linear (geometric) coordinates (explicit or implicit, e.g. calculated as a sum of the coordinate of beginning and the length of the net element) of the same place represented at different levels of aggregation should have the same value. In the figure [2] (linear) coordinate the coordinate of e.g. end of ne1 should be same as one of ne1.2.

Suggested semantic IS:011 constraint for railML3.
Aggregation must not happen within the same level of detail. In the figure [2], element 1.1 must not aggregate element 1.2. This means that aggregating and aggregated net elements must not be referred from the same <level>.

Thanks in advance.

[1] https://wiki3.railml.org/wiki/Dev:Semantic_Constraints
[2] https://wiki3.railml.org/wiki/IS:netElement

Sincerely,