Subject: How do I describe this simple case?
Posted by tobias on Thu, 28 Apr 2005 15:16:59 GMT
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I wish to use the infrastructure scheme to describe something very simple, namely a set of stations and lines between these stations. Suppose I have four stations like in the figure below:

```
 A ------- B ------ C
       /
 D -----
```

I want it to be clear from the description that a train going from A to D have to reverse in B, while a train from A to C doesn't.

After studying the nifty example file (DemoNet), it is clear that this scheme can describe very complex things, but I am unsure how to describe this simple case. This is how far I have got:

- Stations need to be entered as operationControlPoints (ocps).
- The only way to reference an ocp is through the crossSection element.
- The crossSection element has an attribute called "dir" which is described as "Direction validity of element". I don't understand this, but it is the only way I have found to specify in which "end" of the station the line starts or stops.

Given this, I defined the direction "up" to be to the right in my figure and tried the implementation below. I described each line as going from one ocp to another and consisting of a single track. I used the mainDir attribute to specify which way the trains can travel, although I am not certain this is the correct way to use this attribute. For the pos-attribute I said that a line starts at 0.0 and ends at 1.0.

Can someone please tell me if I am on the right track here (no pun intended).

```
<railml>
  <infrastructure>
    <operationControlPoints>
      <ocp ocpID="A"/>
      <ocp ocpID="B"/>
      <ocp ocpID="C"/>
      <ocp ocpID="D"/>
    </operationControlPoints>
    <lines>
      <line lineID="AB">
        <tracks>
          <track trackID="1" mainDir="both">
```

```
      <trackTopology>
        <trackBegin>
          <bufferStop elemID="StartTrack1" pos="0.0"/>
        </trackBegin>
        <trackEnd>
          <bufferStop elemID="EndTrack1" pos="1.0"/>
        </trackEnd>
        <crossSections>
          <crossSection pos="0.0" dir="up" ocpIDRef="A"/>
          <crossSection pos="1.0" dir="down" ocpIDRef="B"/>
        </crossSections>
      </trackTopology>
    </track>
  </tracks>
</line>
<line lineID="BC">
  <tracks>
    <track trackID="1" mainDir="both">
      <trackTopology>
        <trackBegin>
          <bufferStop elemID="StartTrack1" pos="0.0"/>
        </trackBegin>
        <trackEnd>
          <bufferStop elemID="EndTrack1" pos="1.0"/>
        </trackEnd>
        <crossSections>
          <crossSection pos="0.0" dir="up" ocpIDRef="B"/>
          <crossSection pos="1.0" dir="down" ocpIDRef="C"/>
        </crossSections>
      </trackTopology>
    </track>
  </tracks>
</line>
<line lineID="BD">
  <tracks>
    <track trackID="1" mainDir="both">
      <trackTopology>
        <trackBegin>
          <bufferStop elemID="StartTrack1" pos="0.0"/>
        </trackBegin>
        <trackEnd>
          <bufferStop elemID="EndTrack1" pos="1.0"/>
        </trackEnd>
        <crossSections>
          <crossSection pos="0.0" dir="down" ocpIDRef="B"/>
          <crossSection pos="1.0" dir="up" ocpIDRef="D"/>
        </crossSections>
      </trackTopology>
```

```
        </track>
       </tracks>
      </line>
    </lines>
  </infrastructure>
</railml>
```

Subject: Re: How do I describe this simple case?
Posted by Matthias Hengartner on Wed, 04 May 2005 11:45:08 GMT
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Hello,

> I wish to use the infrastructure scheme to describe something very simple,
> namely a set of stations and lines between these stations. Suppose I have
> four stations like in the figure below:
>
> A ------- B ------ C
>   /
> D -----
>
> I want it to be clear from the description that a train going from A to D
> have to reverse in B, while a train from A to C doesn't.
>
> After studying the nifty example file (DemoNet), it is clear that this
> scheme can describe very complex things, but I am unsure how to describe
> this simple case. This is how far I have got:
>
> - Stations need to be entered as operationControlPoints (ocps).
> - The only way to reference an ocp is through the crossSection element.
> - The crossSection element has an attribute called "dir" which is
> described as "Direction validity of element". I don't understand this, but
> it is the only way I have found to specify in which "end" of the station
> the line starts or stops.

hmm, AFAIK the "dir"-attribute of <crossSection> has no meaning (please correct me if I'm wrong). I think that <crossSection> is "only" used for the assignment of a <track> to an <ocp>.

Below I have a possible way to describe your case. Please note that there is no explicit description of how to get e.g. from A to D, but it can be figured out (computed) implicitly by means of <crossSection>-, <switch>- and <connection>-element and their attributes (in particular "orientation" of <switch>).
[This information is kind of a higher-level topology-information, which has to be computed out of the detailed topology-information. Perhaps it makes sense to discuss about a possibility to integrate such higher-level

information about the topology in a future version of the schema].

Best regards,
Matthias Hengartner

(see also the graphical representation of this topology:
http://matthias.theband.ch/railml/crossSections.jpg)

```
 <infrastructure>
  <lines>
   <line lineID="line1">
    <tracks>
     <track trackID="track1">
      <trackTopology>
       <trackBegin>
        <bufferStop pos="0.0" elemID="startTrack1"/>
       </trackBegin>
       <trackEnd>
        <bufferStop pos="3.0" elemID="endTrack1"/>
       </trackEnd>
       <connections>
        <switch pos="1.0" elemID="switch1">
         <connection orientation="incoming" connectionID="con1"
branchIDRef="con2" branchTrackIDRef="track2"/>
        </switch>
       </connections>
       <crossSections>
        <crossSection pos="0.5" ocpIDRef="A"/>
        <crossSection pos="1.5" ocpIDRef="B"/>
        <crossSection pos="2.5" ocpIDRef="C"/>
       </crossSections>
      </trackTopology>
     </track>
     <track trackID="track2">
      <trackTopology>
       <trackBegin>
        <simpleConnection pos="0" elemID="startTrack2">
         <connection connectionID="con2" branchIDRef="con1"
branchTrackIDRef="track1"/>
        </simpleConnection>
       </trackBegin>
       <trackEnd>
        <bufferStop pos="1.0" elemID="endTrack2"/>
       </trackEnd>
       <crossSections>
        <crossSection pos="0.5" ocpIDRef="D"/>
```

```
      </crossSections>
     </trackTopology>
    </track>
   </tracks>
  </line>
 </lines>
 <operationControlPoints>
  <ocp ocpID="A"/>
  <ocp ocpID="B"/>
  <ocp ocpID="C"/>
  <ocp ocpID="D"/>
 </operationControlPoints>
</infrastructure>
```

--
****
Matthias Hengartner

hengartner@ivt.baug.ethz.ch
++ 41 44 633 68 16
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