
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>

```

```
</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>
</infrastructure>
```

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

--

Matthias Hengartner

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