

Dear all,

Thales wanted to give another example for the modeling of a level crossing. We discussed Georg's example, which used the infrastructure.

Here is an example with the infrastructure in combination with the interlocking layer. While the infrastructure layer maps the objects on a graph (netElements) and there are few possibilities to create associations between different infrastructure objects, interlocking layer often offers this possibility. The linking of the elements follows here the business logic. This is the reason that a level crossing (IL) is connected to tracks (IL) and these tracks (IS) are then mapped onto "netElements".

Example for a level crossing over two track in the railML3 file:

```
<!--infrastructure layer -->
<infrastructure>
...
<levelCrossingIS id="uvAn5AZZsL7flbwHdRjDkca">
  <name name="GRM LX_3GRM" language="en"/>
  <designator register="costId" entry="LevelCrossing:BGS_GRM_LX_3"/>
  <designator register="sci_cc" entry="NO_A29_GRMLCSLX_3___"/>
</levelCrossingIS>
...
<track id="GBQBJs3oZDo85PZD8zIOI9g8" type="other:levelCrossingTrack">
  <name name="GRM LX_3_1GRM" language="en"/>
  <linearLocation id="LL_GBQBJs3oZDo85PZD8zIOI9g8">
    <associatedNetElement
netElementRef="ZHiQjsi8DUialCTNQdA3yWb" intrinsicCoordBegin="0.625003"
intrinsicCoordEnd="0.832348" keepsOrientation="true"/>
    </linearLocation>
    <designator register="sci_cc" entry="NO_A29_GRMLCTLX_3_1_"/>
    <designator register="costId"
entry="TrackSection:LCT_BGS_GRM_LX_3_1"/>
  </track>
...
<track id="Le4nO6kfrfaNS2HpJnZHk1b" type=" other:levelCrossingTrack ">
  <name name="GRM LX_3_2GRM" language="en"/>
  <linearLocation id="LL_Le4nO6kfrfaNS2HpJnZHk1b">
    <associatedNetElement
netElementRef="xs4TeJZDctCaMRt47ZZVpYJ8" intrinsicCoordBegin="0.518872"
intrinsicCoordEnd="0.642698" keepsOrientation="true"/>
    </linearLocation>
    <designator register="sci_cc" entry="NO_A29_GRMLCTLX_3_2_"/>
```

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    <designator register="costId"
entry="TrackSection:LCT_BGS_GRM_LX_3_2"/>
  </track>

  ...
</infrastructure>

<!--Interlocking layer - ->
<interlocking>
  ....
  <trackIL id="IL_GBQBJs3oZDo85PZD8zIOI9g8" >
    <designator register="station" entry="GRM"/>
    <belongsToOperationalPoint ref="iv4E2FZDsZDyaVN89pt39wx9"/>
    <hasCommand ref="Z4mQSBWmchOeaRCiy06j7ba"/>

    ...
    <refersTo ref="GBQBJs3oZDo85PZD8zIOI9g8"/>
    <hasTvdSection ref="TVD_OoA0orA5Rj3qNI03sc3oZZa"/>
  </trackIL>

  ...
  <trackIL id="IL_Le4nO6kfrfaNS2HpJnZHk1b">
    <designator register="station" entry="GRM"/>
    <belongsToOperationalPoint ref="iv4E2FZDsZDyaVN89pt39wx9"/>
    <hasCommand ref="Z4mQSBWmchOeaRCiy06j7ba"/>

    ...
    <refersTo ref="Le4nO6kfrfaNS2HpJnZHk1b"/>
    <hasTvdSection ref="TVD_VSQ5ZDtBJ9D7sokZDJzh1Ee8"/>
  </trackIL>

  ...
  <levelCrossingIL id="IL_uvAn5AZZsL7flbwHdRjDkca"
typicalTimeToClose="PT0S">
    <designator register="station" entry="GRM"/>
    <hasCommand ref="Z8PQrISVKRb5MGOYTiZDFRfb"/>

    ...
    <isLevelCrossingType ref="lcr_type5"/>
    <refersTo ref="uvAn5AZZsL7flbwHdRjDkca"/>
    <hasLevelCrossingTrack ref="IL_GBQBJs3oZDo85PZD8zIOI9g8"/>
    <hasLevelCrossingTrack ref="IL_Le4nO6kfrfaNS2HpJnZHk1b"/>
  </levelCrossingIL>

  ...
  <specificInfrastructureManager ref="infrastructure_01">
    <usesTypes>

      ...
      <hasLevelCrossingType id="lcr_type5"
controlType="fullControlled" hasBarrier="true" hasTrafficWarning="true"/>
    </specificInfrastructureManager>

    ...
  </interlocking>

```

For this solution we have a wish: If a track only exists (gets an extra

name) because it belongs to a level crossing, you should be able to recognize this via the 'type' attribute at <track>. We would want to use the value 'levelCrossingTrack' for that attribute or have the possibility to use our own extensions with "other:levelCrossingTrack".

Would it be possible to add an "other" extension in railML 3.2 to the attribute "type" of the track in order to be able to define your own types?

Best regards,

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