
Subject: Time Relations of Infrastructure and External References via <any> Attribute

Posted by [Tobias Bregulla](#) on Tue, 20 Jun 2017 08:27:58 GMT

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Dear railML infrastructure community,

our software GPSinfradat is an integrated hard- and software solution for GNSS- and video based infrastructure survey of railways. This hardware is combined by a tailor-made software suite from an in-house development with a certified railML 2.2 and 2.3 export interface.

For our application we are currently missing a central aspect in the model: the time. In particular, we want to specify for each infrastructure element the time when it has been recorded by our system and the relation to the corresponding video picture. Although this seems to be a very specific problem, it relates to a more generic topic to be discussed: the introduction of a more complex time dimension model within railML®.

Therefore, we propose having a generic solution, which can be adopted by other applications / use cases, too. We currently can formulate the following requirements for our application:

- Recording of time with millisecond accuracy
- Absolute time stamps following the UTC time
- Relative time in form of seconds since start of recording

The following reduced example of a signal shows how we imagine to see it implemented in railML:

```
<signal id="si01" >
  <times>
    <time id="si01_t01" date="2017-05-24" utcTime="09:30:10.320Z" relTime="32.812"
type="survey" gpsinfradat:SurveyRefID="c134f4a0-6085-48f4-a3e4-79daa2305e78">
  </times>
</signal>
```

The type shall be used to define different kinds of timestamps, e.g. "validFrom", "validTo", "updated", "modified" etc. The time values itself can be of type xs:date (date), xs:time (utcTime) and xs:nonNegativeInteger (relTime).

@railML community:

Do you have similar requirements? Do you have any special constraints how to model time aspects? Do you know about other types of modelling (OpenStreetMap or others)?

Further, we would like to reference an external data source with our recordings. In particular, it should be possible to reference a video file with the <track> element. Though we think that this is a very specific request to be most probably realized in a schema extension, we want to share our proposal with you:

```
<track id="tr01" ... >
  <trackTopology>
    ...
  </trackTopology>
  <gpsinfradat:survey id=c134f4a0-6085-48f4-a3e4-79daa2305e78
startTime="2017-05-30T09:30:10.320Z">
    <gpsinfradat:video id=ad0c3743-281d-44ee-97ec-24778981967b type="front"
```

```
fileRef="\customer\project\video01.mp4"/>
  <gpsinfradat:gnss id=bd0c3743-281d-44ee-97ec-24778981967b type="rawSatellite"
fileRef="\customer\project\video01.gnssraw"/>
  <gpsinfradat:video id=42b739b7-1176-4681-b940-994bb9a77038 type="front"
fileRef="\customer\project\video01.mp4"/>
  <gpsinfradat:gnss id=4916e3bd-5568-40a0-9cb6-5a2926c1eb30 type="matched"
fileRef="\customer\project\video01.gnsscrypt"/>
</gpsinfradat:survey>
</track>
```

@railML community:

Does anyone have similar requirements? Are there other members in the railML community who used the terms

above in another meaning? Whats your opinion about shortening of tags ("videoRef" instead "videoReference") in the railML syntax?

Best regards,

Tobias Bregulla
Bahnkonzept Dresden/Germany

Subject: Re: Time Relations of Infrastructure and External References via <any> Attribute

Posted by [christian.rahmig](#) on Mon, 03 Jul 2017 15:52:22 GMT

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Dear Tobias,

thank you very much for your feedback and welcome to our railML community!

Short answer on your questions:

Am 20.06.2017 um 10:27 schrieb Tobias Bregulla:

> [...]

>

> For our application we are currently missing a central aspect in the
> model: the time. In particular, we want to specify for each
> infrastructure element the time when it has been recorded by our system
> and the relation to the corresponding video picture. Although this seems
> to be a very specific problem, it relates to a more generic topic to be
> discussed: the introduction of a more complex time dimension model
> within railML.

The topic is currently under discussion at the RTM Expert Group. We will keep you up to date regarding any changes or approaches. As indicated, major changes will be only implemented with railML v3. For railML v2, please use the existing elements/attributes or make use of an own extension.

> [...]
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> recordings. In particular, it should be possible to reference a video
> file with the <track> element. Though we think that this is a very
> specific request to be most probably realized in a schema extension, we
> want to share our proposal with you:
> [...]

Sounds interesting. Currently, I do not know anybody else having these requirements or application. Therefore, please feel free to go on with your proposed solution!

Best regards
Christian Rahmig

--

Christian Rahmig - Infrastructure scheme coordinator
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Altplauen 19h; 01187 Dresden; Germany www.railml.org

Subject: Re: Time Relations of Infrastructure and External References via <any> Attribute

Posted by [christian.rahmig](#) on Mon, 20 Nov 2017 13:04:50 GMT

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Dear all,

I created a related Trac ticket in [1]. Please feel free to write me your feedback that may be very valuable for finalizing the first version of new railML baseline 3: railML 3.1.

[1] <https://trac.railml.org/ticket/315>

Thank you very much and best regards
Christian

Am 20.06.2017 um 10:27 schrieb Tobias Bregulla:

> Dear railML infrastructure community,
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> for GNSS- and video based infrastructure survey of railways. This
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> Best regards,
>
> Tobias Bregulla
> Bahnkonzept Dresden/Germany

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Christian Rahmig - Infrastructure scheme coordinator
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