
Subject: request for an attribute for the Infrastructure Manager of a line

Posted by on Wed, 23 May 2012 12:57:03 GMT

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Dear all,

in RailML 2.0, we used the attributes <trackGroups>.<line>.uicNumber and <trackGroups>.<line>.lineNumber to uniquely describe a railway line of infrastructure. In RailML 2.1, there is the new attribute <trackGroups>.<line>.code as the only possibility for an external primary key of a line.

In practice, the Infrastructure Managers give their lines numbers or names/abbreviations but so far there is no international unique key for a line. Therefore, it is necessary to add the In-frastructure Manager's key to the primary key of a line.

If we would put both into 'code', e. g. code='80.6363' or 'DB.6363', this would mean to 'scan' the code when importing infrastructure or a timetable. It is one of the agreed principles of RailML to avoid known 'scanning' of strings due to all the problems which comes along (for instance to force a unique separating character between IM code and line number). Therefore, we (iRFP) cannot import RailML 2.1 because we refuse to scan the 'code'.

I think we should introduce attributes

- clearly to define the Infrastructure Manager of a line separated from 'code',
- to define the key (number or abbreviation) of the line at this IM which may be 'code'.

This means: Christian, please provide one new attribute 'IM', string, or analogous.

Best regards,
Dirk.

Subject: Re: request for an attribute for the Infrastructure Manager of a line

Posted by [Christian Rahmig](#) on Sat, 23 Jun 2012 08:22:27 GMT

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Hello Dirk,

- > in RailML 2.0, we used the attributes <trackGroups>.<line>.uicNumber and
- > <trackGroups>.<line>.lineNumber to uniquely describe a railway line of
- > infrastructure. In RailML 2.1, there is the new attribute
- > <trackGroups>.<line>.code as the only possibility for an external

- > primary key of a line.
- >
- > In practice, the Infrastructure Managers give their lines numbers or
- > names/abbreviations but so far there is no international unique key for
- > a line. Therefore, it is necessary to add the In-frastructure Manager's
- > key to the primary key of a line.

+1

- > If we would put both into 'code', e. g. code='80.6363' or 'DB.6363',
- > this would mean to 'scan' the code when importing infrastructure or a
- > timetable. It is one of the agreed principles of RailML to avoid known
- > 'scanning' of strings due to all the problems which comes along (for
- > instance to force a unique separating character between IM code and line
- > number). Therefore, we (iRFP) cannot import RailML 2.1 because we refuse
- > to scan the 'code'.
- >
- > I think we should introduce attributes
- > - clearly to define the Infrastructure Manager of a line separated
- > from 'code',
- > - to define the key (number or abbreviation) of the line at this IM
- > which may be 'code'.

I propose the following implementation for railML 2.2, which can be also found in the trac ticket [1]:

The new attribute 'uicNumber', which contains the UIC country code, will be added to complex type 'tLine':

```
<xs:attribute name="uicNumber" type="rail:tTwoDigits" />
```

For defining the number of the line (without the UIC Country Code), please use the generic attribute 'code'.

The ID of the infrastructure manager will be stored in the new attribute 'imNumber' in complex type 'tLine':

```
<xs:attribute name="imNumber" type="xs:string" />
```

Any questions and comments appreciated...

Regards

[1] <https://trac.assembla.com/railML/ticket/152>

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Christian Rahmig
railML.infrastructure coordinator

Subject: Re: request for an attribute for the Infrastructure Manager of a line
Posted by [Christian Rahmig](#) on Tue, 26 Jun 2012 12:42:15 GMT
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Hello everyone,

after a small discussion with Susanne, we propose to rename the parameters given in the previous forum entry:

- > The new attribute 'uicNumber', which contains the UIC country code, will
- > be added to complex type 'tLine':
- > `<xs:attribute name="uicNumber" type="rail:tTwoDigits" />`

Refining the attribute "uicNumber" into "uicCountryCode".

- > For defining the number of the line (without the UIC Country Code),
- > please use the generic attribute 'code'.
- >
- > The ID of the infrastructure manager will be stored in the new attribute
- > 'imNumber' in complex type 'tLine':
- > `<xs:attribute name="imNumber" type="xs:string" />`

Refining the attribute "imNumber" into "imCode" as an enumeration list with typical infrastructure managers with the free (schema-independent) extension possibility (other:xxx):

```
<line code="..." uicCountryCode="80" imCode="DB-Netz">...  
<line code="..." uicCountryCode="88" imCode="Infrabel">...  
<line code="..." uicCountryCode="43" imCode="ROeEE">...  
<line code="..." uicCountryCode="81" imCode="ÖBB-Infra">...  
<line code="..." uicCountryCode="85" imCode="SBB-Infrastruktur">...  
<line code="..." uicCountryCode="63" imCode="BLS-Netz">...  
<line code="..." uicCountryCode="54" imCode="SŽDC">...
```

The modifications can be found in trac ticket #152 [1]. Again, any comments are appreciated.

[1] <https://trac.assembla.com/railML/ticket/152>

Regards

--
Christian Rahmig
railML.infrastructure coordinator

Subject: Re: request for an attribute for the Infrastructure Manager of a line

Posted by on Fri, 29 Jun 2012 19:30:21 GMT

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Dear Christian,

thank you for the proposal on Infrastructure Manager of a line.

> <line code="..." uicCountryCode="80" imCode="DB-Netz">...

Well, many 'codes', but of course it would fit, so no objection from my side.

It may be mis-understandable that sometimes a 'code' shall contain rather a number and sometimes rather an abbreviation or name. So again much depends on good documentation and examples...

> Refining the attribute "imNumber" into "imCode" as an enumeration list
> with typical infrastructure managers with the free (schema-independent)
> extension possibility (other:xxx):

Assuming the IM is a free character string in the writing program: What shall the writing program do to map the free character string to the pre-defined enumeration values? It is possibly demanded a little bit too much to expect that a program can map all spellings of "DB Netz", "DB Netz AG", "DB-Netz", "DB-Netz AG", "DB-Netz-AG", "DB Netze" a.s.o. to the enumeration value.

The problem is that from my opinion, the name or abbreviation of an IM is not a typical case for an enumeration. One should assume that they can change their names as they do it with their shirts...

What should prevent us from writing anything behind "other:", treating the imCode attribute as a simple string without any mapping? Since there is no need to ask a central authority (the Scheme coordinator) to use a new enumeration value, there is also no chance to avoid that two instances use different enumeration values for the same (new) IM. Consequently, we could define imCode as a string from the beginning...

> <xs:attribute name="[uicCountryCode]" type="rail:tTwoDigits" />

Sometimes it is common practice to allow more-than-two-digit numbers to code IM which have no official UIC number. It is not a big problem from my side if we force a UIC-only code here. As earlier discussed in this forum, it is rather a question of how general RailML should be: Should it be valid in UIC countries only or outside also? America, Asia, Africa, Australia?

With `uicCountryCode=tTwoDigits`, RailML seems to be usable in continents starting with 'E' only but not in continents starting with 'A'. At least, the world has more countries than we could code into two digits. So, we put forward the original problem but do not solve it: With two US-American infrastructure companies both numbering their lines from #1, the `uicCountryCode` attribute does not help us to distinguish uniquely between the lines.

Best regards,
Dirk.

Subject: Re: request for an attribute for the Infrastructure Manager of a line
Posted by [Christian Rahmig](#) on Mon, 02 Jul 2012 06:43:01 GMT
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Hello Dirk,

> It may be mis-understandable that sometimes a 'code' shall contain
> rather a number and sometimes rather an abbreviation or name. So again
> much depends on good documentation and examples...

Yes, you are right. Therefore, Susanne gave already few examples in her comment to trac ticket #153 [1].

>> Refining the attribute "imNumber" into "imCode" as an enumeration list
>> with typical infrastructure managers with the free
>> (schema-independent) extension possibility (other:xxx):
>
> [...]
> The problem is that from my opinion, the name or abbreviation of an IM
> is not a typical case for an enumeration. One should assume that they
> can change their names as they do it with their shirts...
> [...]
> Consequently, we could define imCode as a string from the beginning...

I agree with your opinion. On the other side: Wouldn't it be great to having a list with possible entries instead of thinking about the spelling of "DB-Netz" or "DB Netz"? All applications may refer to the enumerations and there is no need for further discussions between the different applications' users. Of course, if the IM decides to change his shirt, we should track this change and update the list.

>> `<xs:attribute name="[uicCountryCode]" type="rail:tTwoDigits" />`
>
> [...]
> With `uicCountryCode=tTwoDigits`, RailML seems to be usable in continents
> starting with 'E' only but not in continents starting with 'A'. At

> least, the world has more countries than we could code into two digits.

Yes, there are countries that don't have a UIC country code, because they are not members of the UIC. However, it is possible to map the whole world to a two-digit code defined as ISO 3166-1 alpha-2 in ISO 3166-1 [2]. If we generalize the attribute 'uicCountryCode' into e.g. 'countryCode' and allow for the alpha-2 codes, railML may become usable in "A-continent" as well.

> [...] With two
> US-American infrastructure companies both numbering their lines from #1,
> the uicCountryCode attribute does not help us to distinguish uniquely
> between the lines.

For distinguishing between the lines, you need to look at the whole "key", which consists of the parameters 'uicCountryCode', 'code' and 'imCode'. In your example, the infrastructure companies would have different values for 'imCode' and thus, their lines could be identified.

[1] <https://trac.assembla.com/railML/ticket/152>

[2] http://en.wikipedia.org/wiki/ISO_3166-1_alpha-2

Regards

Christian Rahmig
railML.infrastructure coordinator

Subject: Re: request for an attribute for the Infrastructure Manager of a line
Posted by [Christian Rahmig](#) on Mon, 10 Sep 2012 12:58:48 GMT

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Hello everyone,

> Refining the attribute "imNumber" into "imCode" as an enumeration list
> with typical infrastructure managers with the free (schema-independent)
> extension possibility (other:xxx):

>

> <line code="..." uicCountryCode="80" imCode="DB-Netz">...

> <line code="..." uicCountryCode="88" imCode="Infrabel">...

> <line code="..." uicCountryCode="43" imCode="ROeEE">...

> <line code="..." uicCountryCode="81" imCode="ÖBB-Infra">...

> <line code="..." uicCountryCode="85" imCode="SBB-Infrastruktur">...

> <line code="..." uicCountryCode="63" imCode="BLS-Netz">...

> <line code="..." uicCountryCode="54" imCode="SŽDC">...

after discussion with the other coordinators, we agreed on renaming the attribute "imCode" into "infrastructureManagerCode". The change is also described in the latest comment of trac ticket [1], which will be implemented in railML 2.2.

[1] <https://trac.assembla.com/railML/ticket/152>

Regards

--

Christian Rahmig
railML.infrastructure coordinator

Subject: Re: request for an attribute for the Infrastructure Manager of a line
Posted by [Christian Rahmig](#) on Mon, 01 Oct 2012 13:11:53 GMT

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Dear railML users,

```
>>> <xs:attribute name="[uicCountryCode]" type="rail:tTwoDigits" />
>>
>> [...]
>> With uicCountryCode=tTwoDigits, RailML seems to be usable in continents
>> starting with 'E' only but not in continents starting with 'A'. At
>> least, the world has more countries than we could code into two digits.
>
> Yes, there are countries that don't have a UIC country code, because
> they are not members of the UIC. However, it is possible to map the
> whole world to a two-digit code defined as ISO 3166-1 alpha-2 in ISO
> 3166-1 [2]. If we generalize the attribute 'uicCountryCode' into e.g.
> 'countryCode' and allow for the alpha-2 codes, railML may become usable
> in "A-continents" as well.
>
> [1] https://trac.assembla.com/railML/ticket/152
> [2] http://en.wikipedia.org/wiki/ISO\_3166-1\_alpha-2
```

In the above discussion, we agreed on the opinion that the attribute 'isoCountryCode' is not needed: Many lines in border regions include tracks in two or more countries. To avoid additional cuts of the line, the attribute 'isoCountryCode' is deleted. However, the line is uniquely defined by the 'infrastructureManagerCode' and the 'code' given by the infrastructure manager.

Regards

--

Christian Rahmig
railML.infrastructure coordinator

Subject: Re: request for an attribute for the Infrastructure Manager of a line
Posted by [Susanne Wunsch railML](#) on Tue, 27 Nov 2012 11:52:42 GMT
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Hello Christian, Dirk and others,

as discussed at the railML-conference in Zurich and already noticed by Dirk in another thread, we agreed on having a free string field for the 'infrastructureManager' with an additional XML-file providing a pre-defined list of possible values.

>> Refining the attribute "imNumber" into "imCode" as an enumeration list
>> with typical infrastructure managers with the free (schema-independent)
>> extension possibility (other:xxx):

The Trac ticket [1] and current implementation should be changed therefore.

Any objections?

[1] <https://trac.assembla.com/railML/ticket/152>

Kind regards...
Susanne

--

Susanne Wunsch
Schema Coordinator: railML.common

Subject: Re: request for an attribute for the Infrastructure Manager of a line
Posted by [Christian Rahmig](#) on Sun, 02 Dec 2012 09:57:08 GMT
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Hello Susanne,

> as discussed at the railML-conference in Zurich and already noticed by
> Dirk in another thread, we agreed on having a free string field for the
> 'infrastructureManager' with an additional XML-file providing a
> pre-defined list of possible values.
>
> The Trac ticket [1] and current implementation should be changed
> therefore.

>
> Any objections?

Agreed.

> [1] <https://trac.assembla.com/railML/ticket/152>

Regards

--

Christian Rahmig
railML.infrastructure coordinator

Subject: Re: request for an attribute for the Infrastructure Manager of a line
Posted by [Susanne Wunsch railML](#) on Mon, 03 Dec 2012 10:45:18 GMT
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Hi Christian, Dirk and others,

>> as discussed at the railML-conference in Zurich and already noticed by
>> Dirk in another thread, we agreed on having a free string field for the
>> 'infrastructureManager' with an additional XML-file providing a
>> pre-defined list of possible values.
>> [1] <https://trac.assembla.com/railML/ticket/152>

I would propose the following structure for the XML file:

```
<infrastructureManagerCodes xmlns="http://www.railml.org/lists">
  <infrastructureManagerCode id="d1e3">
    <version>
      <code>ThE</code>
      <name>Thüringer Eisenbahn GmbH</name>
      <validity begin="2001-08-01"/>
      <remarks/>
    </version>
  </infrastructureManagerCode>
  <infrastructureManagerCode id="d1e84">
    <version>
      <code>EIB</code>
      <name>Erfurter Industriebahn GmbH</name>
      <validity begin="1990-05-01" end="2007-03-02"/>
      <remarks/>
    </version>
    <version>
      <code>EB</code>
      <name>Erfurter Bahn GmbH</name>
      <validity begin="2007-03-03"/>
    </version>
  </infrastructureManagerCode>
</infrastructureManagerCodes>
```

```
<remarks/>
</version>
</infrastructureManagerCode>
</infrastructureManagerCodes>
```

The code itself is referred inside the 'line' element:

```
<rail:trackGroups>
  <rail:line id="l1" infrastructureManagerCode="EIB">
    <rail:trackRef ref="t1"/>
  </rail:line>
</rail:trackGroups>
```

Kind regards...
Susanne

--
Susanne Wunsch
Schema Coordinator: railML.common

Subject: Re: request for an attribute for the Infrastructure Manager of a line
Posted by [Christian Rahmig](#) on Mon, 03 Dec 2012 13:02:51 GMT
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Hello Susanne and other railML users,

Am 03.12.2012 11:45, schrieb Susanne Wunsch:

```
> [...]
> <rail:trackGroups>
>   <rail:line id="l1" infrastructureManagerCode="EIB">
>     <rail:trackRef ref="t1"/>
>   </rail:line>
> </rail:trackGroups>
```

What do you think of renaming "infrastructureManagerCode" into "infrastructureManager"? Any comments appreciated...

Regards

--
Christian Rahmig
railML.infrastructure coordinator

Subject: Re: request for an attribute for the Infrastructure Manager of a line
Posted by _____ on Mon, 03 Dec 2012 15:27:35 GMT

Dear Susanne,

Am 03.12.2012, 11:45 Uhr, schrieb Susanne Wunsch <coord@common.railml.org>:

> I would propose the following structure for the XML file:

```
....
> <infrastructureManagerCode id="d1e3">
>   <version>
....
> <rail:line id="l1" infrastructureManagerCode="EIB">
>   <rail:trackRef ref="t1"/>
> </rail:line>
```

As far as I see, the /id/ and /infrastructureManagerCode/ are used redundantly. Which one of both attributes is the real reference and which one is "for information only"? I think <trackRef /ref/> is the real reference and /infrastructureManagerCode/ is "for information only". But this

- is different than in the past (where there was no /ref/ at a line),
- is confusing because not self-explaining.

At least, is not practical because in cases when a software knows only the abbreviation of the IM, it is not known whether one should simple use the attribute <line /infrastructureManagerCode/ > or one should create an element <infrastructureManagerCode> for only this code.

In total: Well, it would of course be possible but a little bit complicated, confusing and from my side not to be recommended.

At least, if you decide to do it anyway, please say that the addresses and such (what Andreas suggested) is included in <infrastructureManagerCode><version>.

Dirk.

Subject: Re: request for an attribute for the Infrastructure Manager of a line
Posted by [Susanne Wunsch railML](#) on Mon, 03 Dec 2012 20:55:34 GMT
[View Forum Message](#) <> [Reply to Message](#)

Dear Dirk,

Dirk Bräuer <dirk.braeuer@irfp.de> writes:

> Am 03.12.2012, 11:45 Uhr, schrieb Susanne Wunsch <coord@common.railml.org>:
>

>> I would propose the following structure for the XML file:

```
> ...
>> <infrastructureManagerCode id="d1e3">
>>   <version>
> ...
>> <rail:line id="I1" infrastructureManagerCode="EIB">
>>   <rail:trackRef ref="t1"/>
>> </rail:line>
>
```

> As far as I see, the /id/ and /infrastructureManagerCode/ are used
> redundantly. Which one of both attributes is the real reference and
> which one is "for information only"?

Not "redundantly", but currently the 'id' of the
<infrastructureManagerCode> in the separate XML file is not used at all.

We thought about using the "id" value instead of the "code" value, but
that would mean, that any software which reads a railML file without
knowledge of the separate "list-XML-file" gets no information for this
attribute.

> I think <trackRef /ref/> is the real reference and
> /infrastructureManagerCode/ is "for information only".

The 'trackRef' is the "real information" for grouping the tracks into
lines for the railML file context. The 'infrastructureManagerCode' is
the "real information" for defining the "owner" of the defined 'line'.

I don't see any redundancy here. If the importing software already has
some knowledge about lines, their tracks and its infrastructure manager,
it has to check the consistency of the railML data.

> But this
> - is different than in the past (where there was no /ref/ at a line),

The concept of 'trackRef's in the 'line' element was introduced with
railML 2.0.

> - is confusing because not self-explaining.

Please help me out, I don't see the confusion yet. But I know, I'm
sometimes a bit blind regarding the semantics of railML constructs.

> At least, is not practical because in cases when a software knows only
> the abbreviation of the IM, it is not known whether one should simple
> use the attribute <line /infrastructureManagerCode/ > or one should
> create an element <infrastructureManagerCode> for only this code.

- * If the abbreviation of the IM matches one "currently valid" "code" in the XML-list-file, all is fine. This abbreviation should be taken for the attribute "infrastructureManagerCode" in the "line" element.
 - * If the "string" look up fails, the abbreviation may be defined in the XML-list-file in a slightly different way, eg. "DB-Netz" vs. "DB Netz AG". Then the XML-list-file entry "code" is recommended to use for the attribute "infrastructureManagerCode" in the "line" element.
 - * If the look up fails at all, because this IM is currently not registered at the XML-list-file this "RFE (request for enhancement)" should be sent to the railML infrastructure coordinator in order to add this value. The proposed new abbreviation for the IM should be used for the attribute "infrastructureManagerCode" in the "line" element.
- > At least, if you decide to do it anyway, please say that the addresses
> and such (what Andreas suggested) is included in
> <infrastructureManagerCode><version>.

I see the addresses as some kind of contact data. I don't want to host them at railML. It's more or less a hint for the railML-file-consumer whom to contact in case of any questions. It may be a special personal contact information, eg. a person responsible for a single region with its mobile number.

Kind regards...
Susanne

--
Susanne Wunsch
Schema Coordinator: railML.common

Subject: Re: request for an attribute for the Infrastructure Manager of a line
Posted by _____ on Fri, 07 Dec 2012 15:13:43 GMT
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Dear Susanne and all others,

there are some small questions on the usage of the new additional "XML list files" which I want to write here as an answer to Susanne's post for better understanding. Further writings should possibly take place at <misc>.

- a)
- > * If the abbreviation of the IM matches one "currently valid" "code" in
 - > the XML-list-file, all is fine. This abbreviation should be taken for

> the attribute "infrastructureManagerCode" in the "line" element.

Soweit klar.

b)

> * If the "string" look up fails, the abbreviation may be defined in the
> XML-list-file in a slightly different way, eg. "DB-Netz" vs. "DB Netz
> AG". Then the XML-list-file entry "code" is recommended to use for the
> attribute "infrastructureManagerCode" in the "line" element.

Ok. Wie soll ein Programm herausfinden, ob "may be defined ... in a slightly different way" zutrifft? Dir ist sicherlich bewusst, dass eine phonetische Korrelationsanalyse hier kaum auf Gegenliebe stoßen wird. Ich bezweifle auch, dass jemand tatsächlich etwa eine n:1-Ersetzungsliste mit allen n Schreibweisen einer Bahnverwaltung in seiner RailML-Schnittstelle umsetzt.

c)

> * If the look up fails at all, because this IM is currently not
> registered at the XML-list-file this "RFE (request for enhancement)"
> should be sent to the railML infrastructure coordinator in order to
> add this value. The proposed new abbreviation for the IM should be
> used for the attribute "infrastructureManagerCode" in the "line"
> element.

Auch klar. Hierbei soll dann wohl kein "other:" davorgeschrieben werden? (Dieses "other:" hätte ja den Vorteil, dass man einem lesenden Programm gleich signalisieren kann, dass es den Wert nicht im XML-list-file zu suchen braucht.)

Da (b) unpraktikabel ist, wird wohl nach (a) immer gleich (c) kommen. Das war ja aber klar und in Kauf genommen. Bei unserem RailML wird es vermutlich relativ häufig zu dem Fall kommen, dass unter /infrastructureManagerCode/ eine nicht registrierte Abkürzung bzw. Schreibweise auftaucht - ohne dass wir (iRFP) dem Schemenkoordinator Bescheid geben könnten, da wir gar nichts davon erfahren. (Daher wäre eine Art Signalisierung mit "other:" durchaus sinnvoll, da der Zustand durchaus dauerhaft sein kann.)

English summary: The question is whether a RailML writing software should write "other:" or such in front of values of /infrastructureManagerCode/ if
- either it knows that the value is not in the current XML file list,
- or it does not know whether the value is in the current XML file list.

This "signalisation" could be helpful

- to prevent a reading software from unnecessarily scanning the xml file list,

- to tell a reading software that any possible entry with the same value in the xml file list is not meant.

The background is that currently there is no version-referencing planned for the additional xml list files. So it may be that an infrastructureManagerCode will be added to the list _after_ the RailML file was created and for a different IM. But besides this 'accidentally naming conflict', this technique could also be used to intentionally overwrite an existing infrastructureManagerCode if necessary.

We already have this "other:"-signalisation for enumeration values but so far, it is not compulsory for the new XML list file references.

This question applies not only to /infrastructureManagerCode/ but to all information we will provide using additional XML list files.

> Crosspost & Followup-To: railML.misc

Ja. Irgendwie so. (Bin Forum-Laie.)

Best regards,
Dirk.

Subject: Re: request for an attribute for the Infrastructure Manager of a line
Posted by [Christian Rahmig](#) on Fri, 04 Jan 2013 15:33:28 GMT
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Hi Susanne,

as well as for all the other railML users, I would like to wish you a happy New Year 2013!

Am 03.12.2012 11:45, schrieb Susanne Wunsch:

> Hi Christian, Dirk and others,

>

>>> as discussed at the railML-conference in Zurich and already noticed by
>>> Dirk in another thread, we agreed on having a free string field for the
>>> 'infrastructureManager' with an additional XML-file providing a
>>> pre-defined list of possible values.

>>> [1] <https://trac.assembla.com/railML/ticket/152>

>

> I would propose the following structure for the XML file:

>

> <infrastructureManagerCodes xmlns="http://www.railml.org/lists">

> <infrastructureManagerCode id="d1e3">

> <version>

> <code>ThE</code>

```

> <name>Thüringer Eisenbahn GmbH</name>
> <validity begin="2001-08-01"/>
> <remarks/>
> </version>
> </infrastructureManagerCode>
> <infrastructureManagerCode id="d1e84">
> <version>
> <code>EIB</code>
> <name>Erfurter Industriebahn GmbH</name>
> <validity begin="1990-05-01" end="2007-03-02"/>
> <remarks/>
> </version>
> <version>
> <code>EB</code>
> <name>Erfurter Bahn GmbH</name>
> <validity begin="2007-03-03"/>
> <remarks/>
> </version>
> </infrastructureManagerCode>
> </infrastructureManagerCodes>

```

Since the attribute "id" is not really needed for the purpose of referencing an IM list entry from a <line> within a railML file, I prefer to leave it out. The question is if the user is really interested in the history of the entry i.e. which name did the IM had before. Because that seems to be the only reason why we introduced that "id" attribute first.

To make the structure a little bit slimmer, I suggest the following layout:

```

<infrastructureManagerCodes xmlns="http://www.railml.org/lists">
  <infrastructureManager code="ThE">
    <name>Thüringer Eisenbahn GmbH</name>
    <validity begin="2001-08-01" />
    <remarks />
  </infrastructureManager>
  ...
</infrastructureManagerCodes>

```

Any comments appreciated...

Regards

--

Christian Rahmig
railML.infrastructure coordinator