Subject: References across several XML files
Posted by Jörg von Lingen on Sat, 13 Apr 2019 02:12:57 GMT
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Dear all,

during the conference in Linz the question about references in railML3.x was raised. Currently the referencing in IS-IL is using the ID/IDREF mechanism of XML or alternatively UUIDs. At least the first option can be validated only, when reference and target are within the same XML file. However, in future scenarios only parts of the information will be exchanged, e.g. a new timetable will not repeat the complete infrastructure but needs referencing into it.

Thus the option of using the <designator> element available at FunctionalInfrastructureEntity and EntityIL instead. When using an official register the name shall be unique in the register. However, it may appear at least twice when used for IS part and IL part, e.g. signalIS/designator and signalIL/designator.

There is another issue with using designator as it has two mandatory attributes @register and @entry. Thus a reference to designator shall be always contain the complete tuple of @register and @entry to be unambiguous.

What is your opinion on the topic of references?

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Best regards,
Joerg v. Lingen - Interlocking Coordinator

Subject: Re: References across several XML files
Posted by Thomas Nygreen on Mon, 15 Apr 2019 21:35:53 GMT
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Dear Jörg,
dear all,

I believe that the inclusion of UUIDs as possible IDs and references and the general application of the designator concept are important improvements in railML 3.1 over railML 2.x. Furthermore I believe we should establish a best practice on when and how to use which method. I will add some more thoughts on that after Easter. I encourage the community to post yout views on Jörg's question.

Best regards,
Thomas Nygreen - Common coordinator

Subject: Re: [railML3] References across several XML files
Posted by christian.rahmig on Tue, 16 Apr 2019 18:52:25 GMT
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Dear Jörg, dear all,

Am 13.04.2019 um 04:12 schrieb Joerg von Lingen:
> [...] What is your opinion on the topic of references?

I think that we have to distinguish different types of references:
(1) references that are used only inside one railML file
(2) references from inside a file to "something" outside
(3) references from "something" outside to an element inside a file

For (1), ID/IDREF seems to be the best solution, because an XML scheme
validator can check for corrupt references (e.g. missing destinations or
double IDs).

For (2) and (3), we need "external IDs" and "external references". I
propose to define new attributes of type xs:string in order to allow for
any kind of ID or reference. Using UUIDs or GUIDs might be helpful (e.g.
when adressing data stored in data bases), but there are also cases,
where the external ID or reference shall be very simple.

Following this approach the railML model need to be modified only a
little bit:
* ID can remain like it is today
* apart from the IDREF based reference, a new (external) reference of
type xs:string shall be added.

You may ask: why don't you use the <designator>?
My answer: an element shall have only on ID that can be used for
adressing the element, but it may have an arbitrary number of
designators in different registers.

Best regards
Christian

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Christian Rahmig - Infrastructure scheme coordinator
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Subject: Re: [railML3] References across several XML files
Posted by Joerg von Lingen on Fri, 31 May 2019 11:12:01 GMT
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Dear all,

Christian did made the proposal to add a new attribute/element used in case of external references. I would not like
this approach as it would mean we have *two* possible places to look for 'id' and 'references'.

In case both opprotunies used, who will decide which one shall prevail?

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Best regards,
Joerg v. Lingen - Interlocking Coordinator

Christian Rahmig wrote on 16.04.2019 20:52:
> Following this approach the railML model need to be modified only a
> little bit:
> * ID can remain like it is today
> * apart from the IDREF based reference, a new (external) reference of
> type xs:string shall be added.

Subject: Re: [railML3] References across several XML files
Posted by Martin Karlsson on Mon, 10 Jun 2019 12:32:50 GMT
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Dear all,

I agree with Jörg that there should be only one place to define references and IDs. I think we will not always know beforehand whether a reference will be of type 1, 2 or 3. It will be different in different applications.

My suggestion would be to expand the pattern of tID and tRef. They are currently defined as unions, allowing either a UUID or an xs:ID/xs:IDREF. With a third option of type xs:string, we would cover all options.

I guess a problem could then be that a misspelled UUID or an unmatched IDREF would slip through the XML validation by being identified as a string? So there would in effect be no type check at all. But that can also be seen as a consequence of allowing external references - we can not rely on the XML parser to validate the references anymore.

As you can see, this suggestion is rather incomplete. I hope someone else will pick up the thread!

Best Regards,
Martin