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Subject: RFC: schema locations, transformations

Posted by [Joachim Buechse](#) on Thu, 25 Sep 2003 16:36:08 GMT

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As part of an ongoing project Ergon will contribute several drafts for other schemas of 'operational data' to railml. We have a strong interest, that those schemas are officially published by railml.org. Also we will have to implement upwards and downwards compatibility - i.e. a client written to process timetable data encoded with schema 0.93 should be able to read data encoded with schema 1.02 by downloading and applying an xslt transformation script from a predefined location [as long as this is semantically possible of course].

[1] All current railml main tags (rollingstock, timetable, etc) have a version attribute which is very good for compatibility and automated conversions. This same rule should be followed for all future schemas as well.

[2] I suggest, that we define the url pattern(s) for RailML schema(s). My suggestion is to use the schema version as part of the name. (In the currently published examples the namespace definitions refer to files rather than urls). I additionally suggest to use separate (sub-)schemas for infrastructure, timetable and rollingstock. This allows the usage of separate namespaces for the tags. [It will also get more important once we contribute the operational data schema drafts which might otherwise cloak the schedule for railml 1.0, 1.1, etc].

`http://www.railml.org/schemas/<version>/<name-without-xsd>`

`http://www.railml.org/1.00/railml`

`http://www.railml.org/1.00/infrastructure`

`http://www.railml.org/1.00/timetable`

`http://www.railml.org/1.00/rollingstock`

[3] I suggest that we define urls where XSLT transformation scripts can be located that transform data encoded against different schema versions.

`http://www.railml.org/transformers/<oldversion>-<newversion>/<name.xml>`

`http://www.railml.org/transformers/0.94-1.00/infrastructure.xsl`

[I realize that automated transformations will not be generally possible based on XSLT, especially if semantical changes are involved.]

In our application update mechanism we use a system where several

conversion might have to be performed in sequence i.e.

```
if not exists 0.76 -> 3.12 then
  use 0.76 -> 1.00 -> 2.00 -> 3.00 -> 3.12
if not exist 0.76 -> 1.00 then
  use 0.76 -> 0.8 -> 0.9 -> 1.0 -> ...
...
```

This might be a reasonable approach for the xsl transformers as well. If this is considered an idea worthwhile following, I will provide some java code as a reference implementation.

[4] I suggest that we define a url where a conversion servlet is hosted

<http://www.railml.org/converter>

This URL may redirect the client to another URL (including an https URL). The servlet may require an HTTP Basic-Authorization header with username and password [in case such service would be commercially used].

The servlet should accept a POST request with a multipart-formdata (MIME) encoded data stream with the fields

```
TARGET_VERSION=
DATA=
```

The source version is included in the XML data being passed and hence doesn't need to be provided as a parameter.

[Such a servlet might include semantic value transformations that are not possible with XSLT. The servlet may also implement the same functionality as a (SOAP) Webservice].

PS: I fully realize that creation of XSLT transformers [3] or a converter servlet [4] should currently not be a priority for railml.org. However defining them now will allow implementors to include the mechanisms in their application for future use. These two mechanisms provide good fields for IT student or apprentice work, so I am confident they will be implemented eventually.

Best regards,  
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