Background

- An Event-B model comprises:
  - machines
  - contexts
  - combined using refines, extends, or sees relationship.
- **Encapsulation** within a project.
An (Abstract) Example

(a) Project A

(b) Project B
Motivation

- Sharing common project components
- Project C: Machine$_1$, Context$_1$, Machine$_2$, Context$_2$
- Project A: Machine$_3$, Context$_3$
- Project B: Machine$_4$, Context$_4$
Crossed-Project References

- Referencing components from other projects.
- Experimentally introduced a reference mechanism into Rodin.
- A manifest component is added for each project.
- Identifying components to be imported.
- Imported components are prefixed by project name
- imports relation must be acyclic.
Project C

Machine\(_1\) sees Context\(_1\)

Machine\(_2\) sees Context\(_2\)

Machine\(_3\) sees Context\(_3\)

Project A

Machine\(_4\) sees Context\(_4\)

Project B

manifest imports C_Machine\(_2\), C_Context\(_2\)

manifest imports C_Machine\(_2\), C_Context\(_2\)
Implementation

- **manifest** file is a Rodin Database extension.
- Renaming and copying the statically checked files.
- **No verification** is required for the imported components.
A manual imitation !!!
Limitations

- The static checker works with the statically checked files.
- Most Rodin components require unchecked files.
  - Rodin Editor: Cannot browse to the imported files (refines, sees).
  - Rodin Editor: Extended events cannot be viewed/copied.
  - Generic instantiation ([Fuerst 2014]) uses the unchecked files.
Summary

- Crossed-project reference is useful
  - Managing model variations.
  - Reuse components.

- Our implementation is insufficient for practical usage.
  - Does not propagate changes automatically.

- Further work needs to be done.
Last But Not Least

Figure: A Feature Request

#344 Possibility of split a model in several event-b projects

<table>
<thead>
<tr>
<th>Milestone: unplanned</th>
<th>Status: open</th>
<th>Owner: nobody</th>
<th>Labels: None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority: 7</td>
<td>Created: 2015-02-23</td>
<td>Creator: Luis Diaz</td>
<td>Private: No</td>
</tr>
<tr>
<td>Updated: 2016-05-11</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Add possibility of refine/extend from a machine/context of a different project

Discussion

- **Group:** 3.2 --> unplanned

Laurent Voisin
2015-11-05

Link