Only connect!

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based on work mostly done by

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E.M.Forster, Howard's End, Ch22

Only connect! That was the whole of her sermon. Only connect the prose and the passion, and both will be exalted, and human love will be seen at its height. Live in fragments no longer. Only connect, and the beast and the monk, robbed of the isolation that is life to either, will die.

Basic DEGAS idea and current state

We want to interface UML tools with formal analysis tools.

We have a basic architecture for doing this.

We have an experimental prototype, interfacing the Pepa Workbench with Argo/UML (and hence other XMI-capable UML tools).

We are accumulating expertise about what tools and techniques work best, etc.

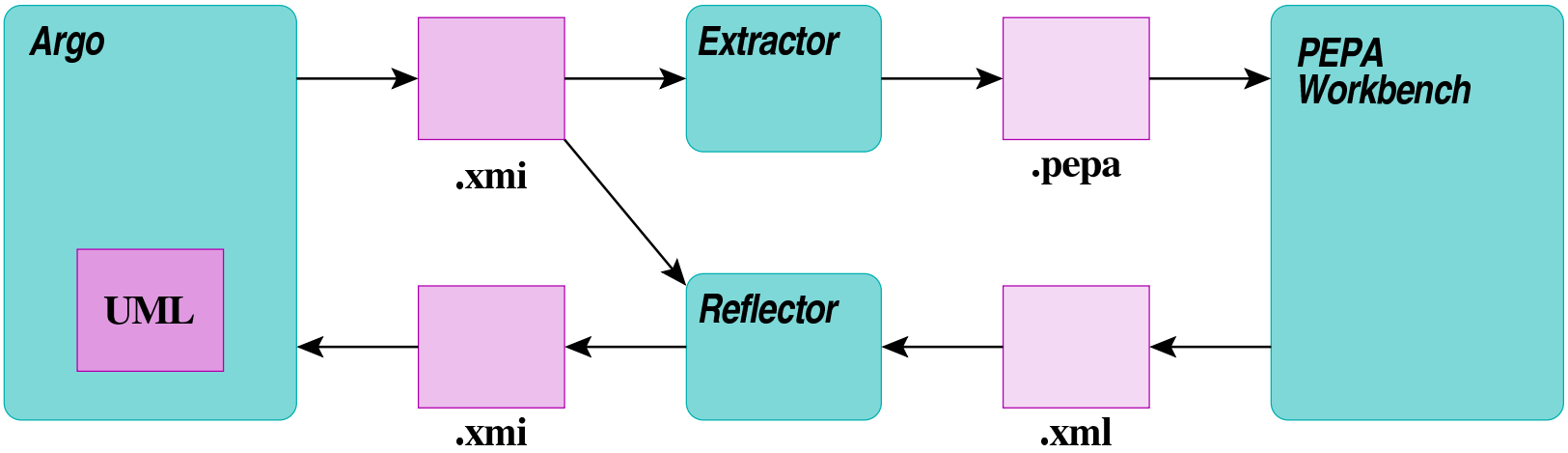
Development model

We can help make it easier for you to integrate your tools by:

- sharing the understanding we've accumulated so far
- recommending tools, libraries etc.
- helping you to find useful resources
- finding solutions to hard problems that may recur

We can't do it all for you.

Example: software architecture



Accessing the UML information

UML is defined by its metamodel - object-oriented abstract syntax.

XMI is a standard(ish) way of saving UML models as XML.

*D*OM is a standard(ish) way of accessing XML documents as object collections.

Tools and techniques: extractor

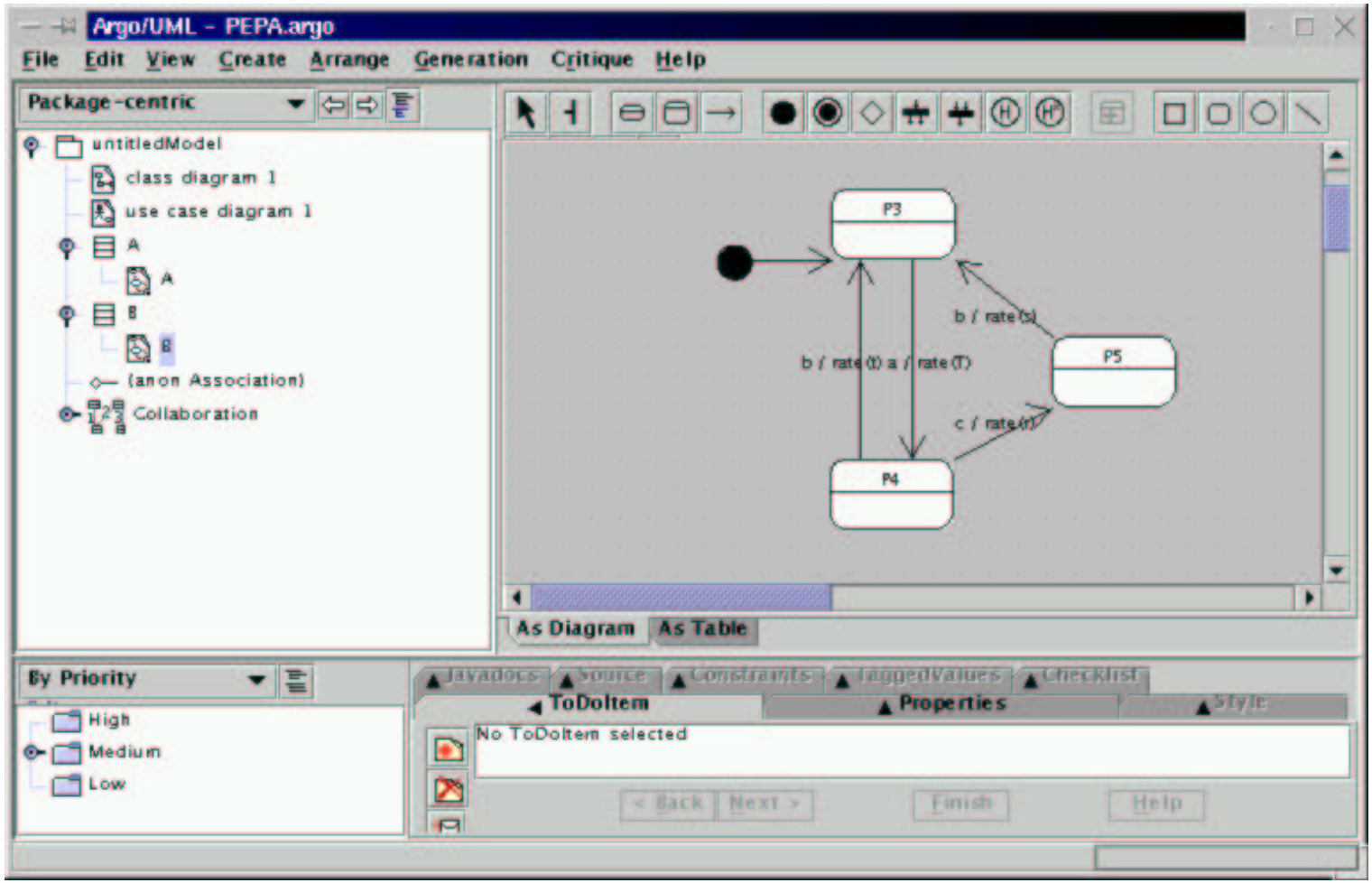
- We use Python as the language of the extractor and reflector. Interpreted, small, clear, free, object-oriented, good text facilities... Perl without the line-noise. Could use [Your Favourite Language].
- We use the Minidom XML parser to parse the XMI file. Once we have the XMI as a DOM object, we can access individual tags by name.
- Could use other parsers, XSLT, etc.

Tools and techniques: reflector

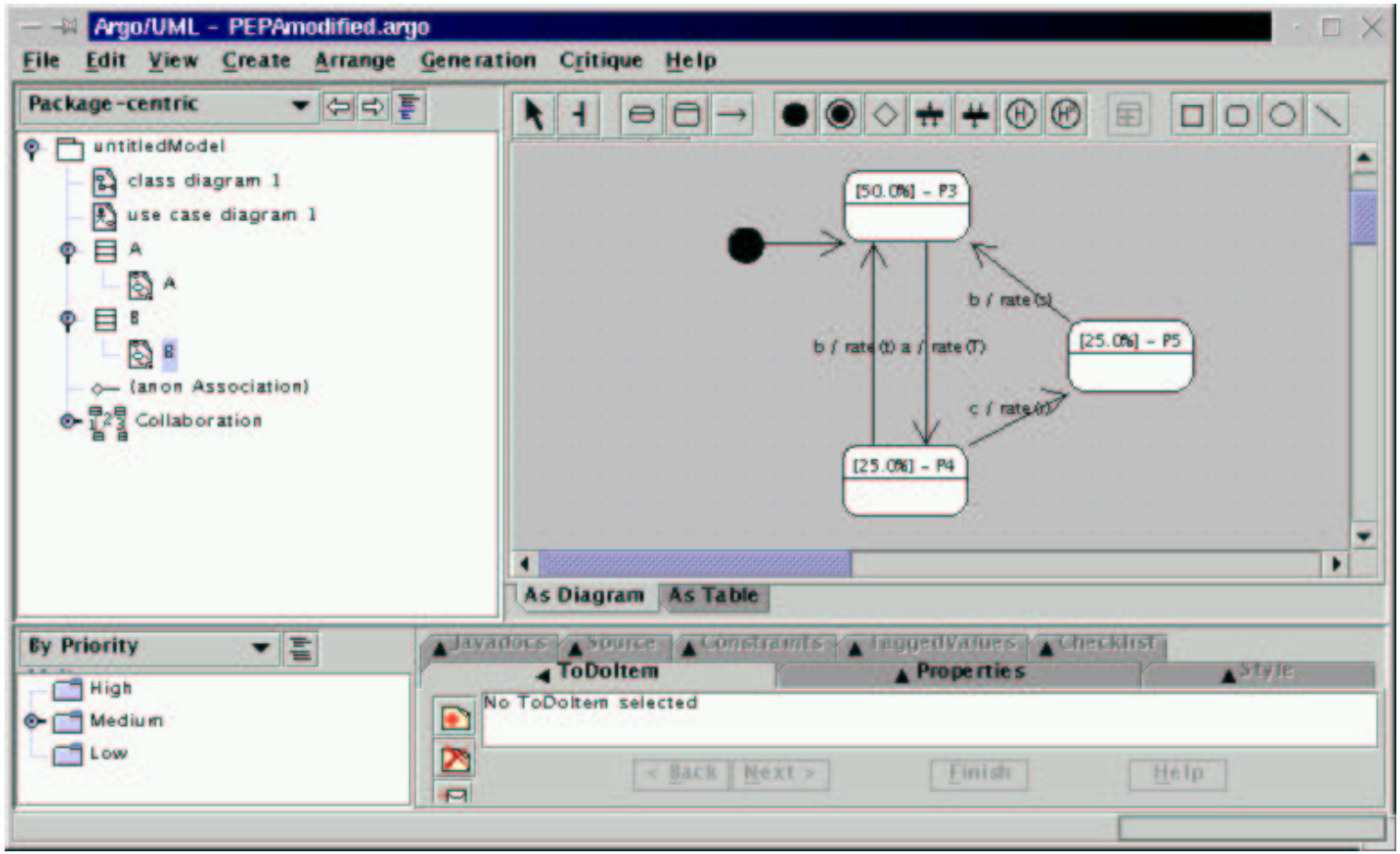
Getting information *back into* the UML model is harder...

- original XMI $+$ formal tool output $\longrightarrow$ new XMI
- We use Minidom to parse the original XMI file and also to build the modified XMI file by creating the branches and leaves of the document. The xml.dom.minidom module supports a very simple interface for adding new XML tags and data to an XML document.
- We modify our original XMI file using the results from the PEPA Workbench where for each statemachine, for each state, we add the corresponding probability.

A simple example (before)



A simple example (after)



Within the project

Deliverable 7, due end December, is entitled

Interface between SENV and VENV

I’m drafting that and trying to make it a document that will be useful to people interfacing tools.

Will circulate shortly: please do read and comment on how it could be more useful.

Please let us know about tools you may want to interface soon, so that we can start thinking how to help with any new issues.

For more information

Have a look at the web page about the prototype;

`http://www.lfcs.ed.ac.uk/degas/prototypes/`

maybe browse the code, maybe read our UKPEW'02 paper...

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