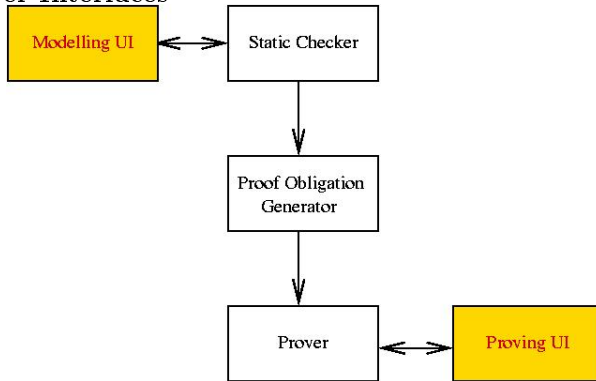


## User Interfaces



## Outline

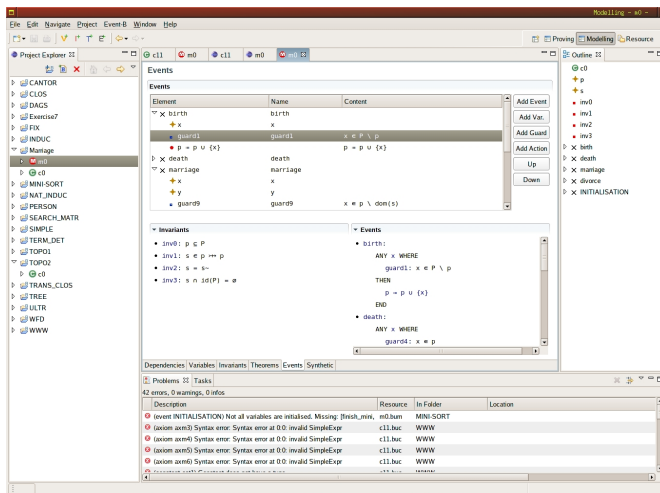
## Contents

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## 1 Modelling Interface: Views and Editors

### Modelling Interface

Contains 3 views and an editor.



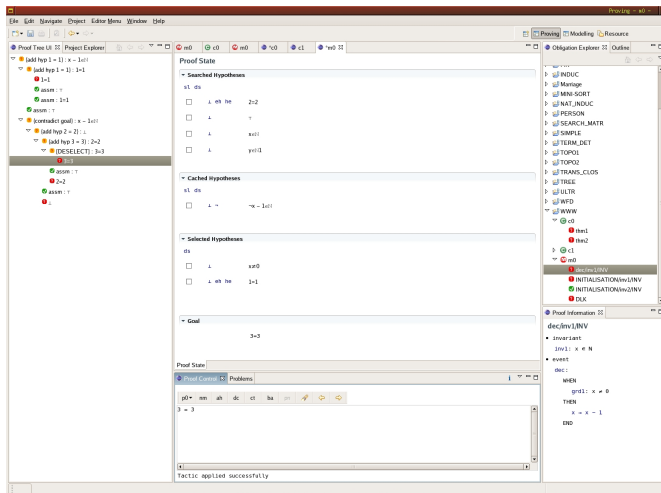
## Modelling Views and Editors: Summary

- *Explorer View* Showing a tree structured view of the workspace.
  - Connects to the *Database*.
  - Connects to the *Event-B Editor* for editing components.
- *Event-B Editor* A specific editor for creating and modifying event-B components.
  - Multi-page Editor.
  - Form Editor.
  - Connects with the *Database*.
- *Outline View* Showing the tree structured view of the current editing component.
  - Connects with the current active *Event-B Editor*.
  - Provides navigations for the editing component.
- *Problems View* Showing error/warning messages.
  - Connects with *Event-B Editors* for navigations of error messages.

## 2 Proving Interface: Views and Editors

### Prover Interface

Contains 4 views and an editor.



## Proving Views and Editors: Summary

- *Obligation Explorer* Showing a tree structured view of the obligations in the workspace.
  - Connects to the *Database*.
  - Connects to the *Prover UI Editor* for proving obligations.
- *Prover UI Editor* Showing the current state of the proof.
  - Showing different set of hypotheses: selected, cached or searched.
  - The current goal.
- *Proof Tree* Showing the tree structured view of the current proof.
  - Connects with the current active *Prover UI Editor*.
  - Provides easy navigations on the proof tree (e.g. travel between different sub-goals).
- *Proof Control* Controlling the proof.
  - A set of buttons.
  - A text field for optional input.
  - Showing proof messages (successful, hint, etc.)
- *Proof Information* Showing related information to the current obligation.

## 3 Extending the User Interface

### Extending the Modelling Interface

- *Adding a new element type (e.g. probabilistic invariants):*
  - Implement a form page;
  - Extend the extension point to add this page to the Event-B Editor.
- *Adding an attribute to an element:*
  - Adding a new column to the editing page (e.g. when adding probabilities to guards),  
or
  - Editing the new attribute in the detail page (if the attribute needs more space, e.g. multi-line comments).

## 4 Extending the Proving Interface

### Extending the Proving Interface

- *Adding a new goal tactic (added to the goal section):*
  - Declare a new goal tactic with a new symbol (shown next to the goal) and when the tactic is applicable;
  - Implement the call to new tactic.
- *Adding a new hypothesis tactic (added to the hypothesis section):*

- Declare a new hypothesis tactic with a new symbol (shown next to the hypothesis) and when the tactic is applicable;
- Implement the call to the new tactic.
- *Adding a new global tactic (added to the Proof Control):*
  - Add a new button (or extend the current button) in the Proof Control and when this is applicable;
  - Implement the call to the new tactic.

## 5 To be done next

Next ...

- Improve the GUI's usability: Adding more buttons, menu, toolbar, to both modelling and proving interfaces, etc.
- Declare extension points.
- Extend the GUI for refinement component.