

CamilleX User Manual

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1 CamilleX Overview

The CamilleX provides new CamilleX constructs (X Machines and XContexts) which are text files which are automatically translated into the corresponding Rodin Event-B constructs (i.e., Machine and Context) accordingly. Facility for translating from Rodin Event-B components to CamilleX components can be invoked manually. The overall process can be seen in Figure 1.

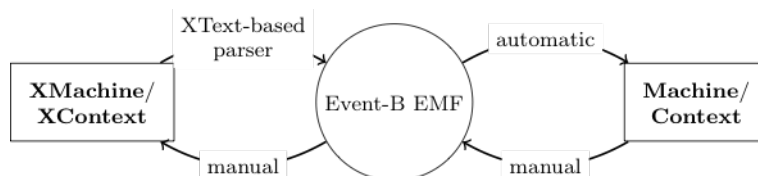


Figure 1: Overview of CamilleX and Rodin Event-B Constructs

-
- 1 Testing
 - 2 machine
-

2 Concepts

2.1 XText Projects

Each project containing CamilleX constructs must be set to be XText project. An XText project has an associated XContext and XMachine builders that can compile CamilleX source files into Rodin files as they are changed. The builders can be turn off via the preferences, either workspace-wise or project-wise (see Figure 2).

The XText projects must be organised such that all CamilleX constructs has the project as the source container.

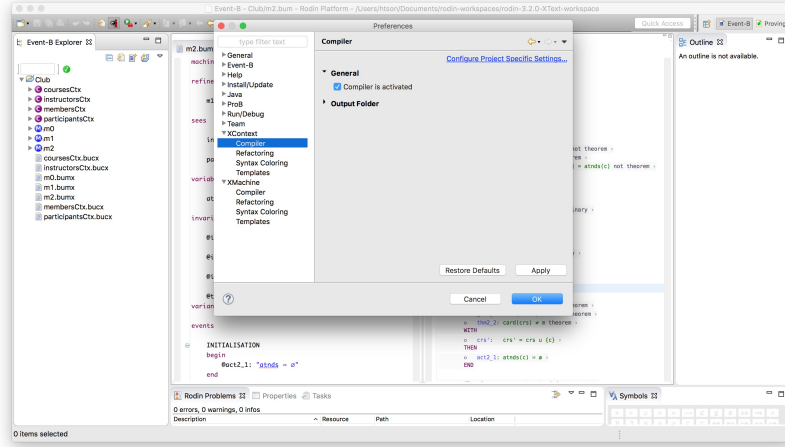


Figure 2: XContext Preference

2.2 CamilleX Builders

The CamilleX Builders, i.e., XContext builder and XMachine builder, build CamilleX constructs, i.e., XContext and XMachine using their own compiler. If they are enabled, the CamilleX builders are run everytime an individual CamilleX file is saved. Problems detected by the CamilleX builders are classified as either warnings or errors. Compile-time errors are always reported as errors by the CamilleX builders and in the presence of errors, no new Rodin files are created or updated, i.e., the CamilleX builders do not produce any new Rodin file content. In the case of machine inclusion and event synchronisation, a flattened machine is generated which includes data from the included machine and the synchronised events, which can be renamed if prefixing is applied.

2.3 Content Assist

Content assist are available for typesetting keywords and Event-B mathematical symbols. The short-cut for invoking content assist is **Ctrl+Space**. Figure 3 shows an example for content assist with keywords. For Event-B mathematical symbols, the key combination is defined by the Rodin Keyboard plug-in.

3 Reference

3.1 Common Syntax

```
ML_COMMENT ::= /* STRING */
SL_COMMENT ::= // SL_STRING
ID ::= [~] (LETTER | \_) \{LETTER | DIGIT | \_ \}
XLABEL ::= STRING:
```

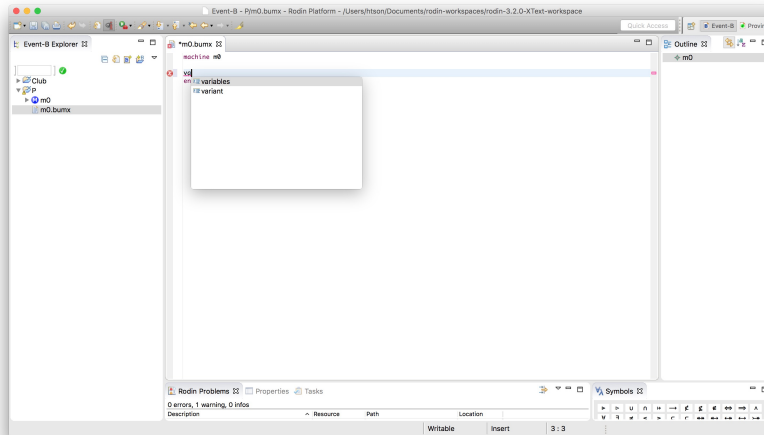


Figure 3: Keyword Content Assist

3.2 Preferences

3.2.1 XContext Preferences

The following XContext preferences can be set on the the XContext preference page and its sub-pages.

Option	Description	Default
Compiler is activated	Compiler is activated or deactivated	Activated

Table 1: XContext Compiler Preferences

Compiler

Syntax Coloring

3.2.2 XMachine Preferences

The following XMachine preferences can be set on the XMachine preference page and its sub-pages.

Compiler

Syntax Coloring

3.3 XEvent-B Editors

3.3.1 XEvent-B Content Assist

In the XContext and XMachine editors press **Ctrl+Space** on code to complete. This opens a list of available code completions. Some tips for using code assist

Option	Description	Default
Comment	Color Background Style (Italic, Bold, Underline, Strike through) Font	Dark Green White None Platform dependent
Default	Color Background Style (Italic, Bold, Underline, Strike through) Font	Black White None Platform dependent
Invalid Symbol	Color Background Style (Italic, Bold, Underline, Strike through) Font	Black White None Platform dependent
Keyword	Color Background Style (Italic, Bold, Underline, Strike through) Font	Dark Purple White Bold Platform dependent
Number	Color Background Style (Italic, Bold, Underline, Strike through) Font	Dark Gray White None Platform dependent
Punctuation character	Color Background Style (Italic, Bold, Underline, Strike through) Font	Black White None Platform dependent
String	Color Background Style (Italic, Bold, Underline, Strike through) Font	Blue White None Platform dependent
Task Tag	Color Background Style (Italic, Bold, Underline, Strike through) Font	Light Blue White Bold Platform dependent

Table 2: XContext Syntax Coloring Preferences

Option	Description	Default
Compiler is activated	Compiler is activated or deactivated	Activated

Table 3: XMachine Compiler Preferences

Option	Description	Default
Comment	Color Background Style (Italic, Bold, Underline, Strike through) Font	Dark Green White None Platform dependent
Default	Color Background Style (Italic, Bold, Underline, Strike through) Font	Black White None Platform dependent
Invalid Symbol	Color Background Style (Italic, Bold, Underline, Strike through) Font	Black White None Platform dependent
Keyword	Color Background Style (Italic, Bold, Underline, Strike through) Font	Dark Purple White Bold Platform dependent
Number	Color Background Style (Italic, Bold, Underline, Strike through) Font	Dark Gray White None Platform dependent
Punctuation character	Color Background Style (Italic, Bold, Underline, Strike through) Font	Black White None Platform dependent
String	Color Background Style (Italic, Bold, Underline, Strike through) Font	Blue White None Platform dependent
Task Tag	Color Background Style (Italic, Bold, Underline, Strike through) Font	Light Blue White Bold Platform dependent

Table 4: XMachine Syntax Coloring Preferences

are listed in the following paragraph:

- You can use the mouse or the keyboard (Up Arrow, Down Arrow, Page Up, Page Down, Home, End, Enter) to navigate and select lines in the list.
- Clicking or pressing Enter on a selected line in the list inserts the selection into the editor.

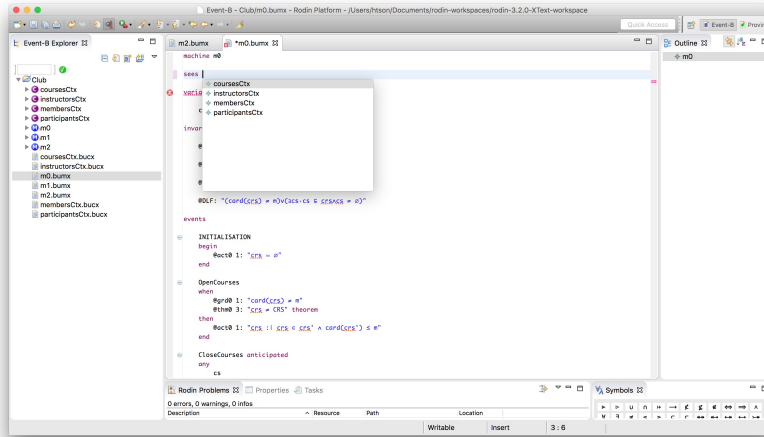


Figure 4: Content Assist for adding Sees clause

3.3.2 XEvent-B Formatter

In the XContent and XMachine editors press **Ctrl+Shift+F** on code to format it. If no selection is set then the entire source is formatted otherwise only the selection will be.

4 Legal

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June 1st, 2006

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A Release Notes

1.0.0 The feature is now called CamilleX (instead of XEvent-B)

- Branding (0.0.4): Updated logo to CamilleX.
- Common (0.0.5): Update copyright statements in source code.
- Cheatsheets (1.0.0): Updated the name to use CamilleX instead of XEvent-B.
- Documentation (1.0.0): Updated the name to use CamilleX instead of XEvent-B.
- UI (0.1.0): Updated the name to use CamilleX instead of XEvent-B.
- XContext (1.0.0): Updated the name to use CamilleX instead of XEvent-B.
 - Update dependency ranges
- XContext IDE (1.0.0): Updated the name to use CamilleX instead of XEvent-B.
 - Update dependency ranges
- XContext UI (1.0.0): Updated the name to use CamilleX instead of XEvent-B.
 - Update dependency ranges
- XMachine (1.0.0): Updated the name to use CamilleX instead of XEvent-B.
 - Update dependency ranges
- XMachine IDE (1.0.0): Updated the name to use CamilleX instead of XEvent-B.
 - Update dependency ranges
- XMachine UI (1.0.0): Updated the name to use CamilleX instead of XEvent-B.
 - Update dependency ranges

0.0.7

- XEvent-B Branding (0.0.3): Updated logo to XEvent-B.
- XEvent-B Common (0.0.4): Enhancement (Issue #11).
 - Machines from different projects can now be included.
 - Machines are now included using qualified name defined as: *project-Name.machineName*

- XEvent-B Documentations (0.0.7): Update documentation for 0.0.7 release.
- XEvent-B XContext (0.0.5): Changed dependency on XText to [2.12.0, 3.0.0).
- XEvent-B XContext IDE (0.0.4): Changed dependency on XText to [2.12.0, 3.0.0).
- XEvent-B XContext UI (0.0.4): Changed dependency on XText to [2.12.0, 3.0.0).
- XEvent-B XMachine (0.0.5):
 - Changed dependency on XText to [2.12.0, 3.0.0).
 - Fixed Issue #8: Comments are not parsed.
 - Fixed Issue #10: Variants not translated: Fix is part of inclusion plug-in release 0.2.0.
 - Flattened machines now have the included machine elements generated before the source machine.
 - Order of generating elements of multiple inclusions and/or instances is from last to first.
 - This update is part of inclusion plug-in release 0.2.0.
- XEvent-B XMachine IDE (0.0.4): Changed dependency on XText to [2.12.0, 3.0.0).
- XEvent-B XMachine UI (0.0.4):
 - Changed dependency on XText to [2.12.0, 3.0.0).
 - Regenerated from XEvent-B XMachine 0.0.5

0.0.6

- Renamed plug-ins and features to XEvent-B (instead of Event-B XText).
- XEvent-B Branding (0.0.2): Renamed from Event-B XText Branding.
- XEvent-B Documentations (0.0.2): Renamed from Event-B XText Documentations.
- XEvent-B Cheatsheets (0.0.2): Renamed from Event-B XText Cheatsheets.
- XEvent-B Common (0.0.3): Renamed from Event-B XText Common.
- XEvent-B UI (0.0.2): Renamed from Event-B XText UI.
- XEvent-B XContext (0.0.4): Renamed from Event-B XText Context.
- XEvent-B XContext IDE (0.0.3): Renamed from Event-B XText Context IDE.
- XEvent-B XContext UI (0.0.3): Renamed from Event-B Context UI.

- XEvent-B XMachine (0.0.4): Renamed from Event-B XText Machine.
 - Support Machine Inclusion and Event Synchronisation.
- XEvent-B XMachine IDE (0.0.3): Renamed from Event-B XText Machine IDE.
- XEvent-B XMachine UI (0.0.3): Renamed from Event-B XText Machine UI.

0.0.5

- Event-B XText Documentations (0.0.1): Documentation plug-in (Initial version).

0.0.4

- Updated plug-in dependency for the feature

0.0.3

- Event-B XText Context (0.0.3):
 - Issue #3: Single-line comment after the element, multi-line comment before the element
- Event-B XText Context IDE (0.0.2): Regenerated
- Event-B XText ContextUI IDE (0.0.2): Regenerated
- Event-B XText Machine (0.0.3):
 - Issue #3: Single-line comment after the element, multi-line comment before the element.
 - Issue #5: Event terminator using 'end' keyword instead of ';'.
- Event-B XText Machine IDE (0.0.2) Regenerated
- Event-B XText Machine UI IDE (0.0.2) Regenerated

0.0.2

- Event-B XText Common (0.0.2):
 - Added transient value service for XContext and XMachine.
- Event-B XText Context (0.0.2):
 - Added formatter (used for auto-indentation).
- Event-B XText Machine (0.0.2):
 - Added formatter (used for auto-indentation).
- Event-B XText UI (0.0.1): Initial version
 - Added context menu for converting machines and contexts to XText.

0.0.1 Initial version contains the following plug-ins:

- Event-B XText Branding (0.0.1) Initial version: Branding information
- Event-B XText Common (0.0.1) Initial version: Common facilities
- Event-B XText Context (0.0.1) Initial version: Core support for Event-B contexts
- Event-B XText Context IDE (0.0.1) Initial version: IDE for Event-B contexts
- Event-B XText Context UI (0.0.1) Initial version: UI for Event-B contexts
- Event-B XText Machine (0.0.1) Initial version: Core support for Event-B machines
- Event-B XText Machine IDE (0.0.1) Initial version: IDE for Event-B machines
- Event-B XText Machine UI (0.0.1) Initial version: UI for Event-B machines