

Atelier B Community Edition 24.04

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1 Announcement

1. Version numbering is now based on the year and the month of the release.

2 Added functionalities

1. Automatic proof-support with Alt-Ergo, CVC4, CVC5 and Z3, based on an encoding of proof obligations in SMT format (ppTransSMT).
2. In the project creation wizard, the advanced settings let the user set the Patch-Prover file to be a symbolic link.
3. Fast proof mode is now available in the GUI.
4. Tools bcomp and bxml options to handle
 - one-letter identifiers :
 - Kernel_joker_is_an_error
 - Kernel_joker_is_a_warning
 - implementation substitutions in machines and refinements :
 - Allow_WHILE_sub_everywhere
 - Allow_SEQUENTIAL_sub_in_machine
 - Allow_VAR_sub_in_machine
 - additional relational operators $\ll\rightarrow$, $\langle\rightarrow\rangle$ and $\ll\rightarrow\rangle$:
 - Allow_total_and_surjective_relation_operators

Note that only those two tools support these extensions to the B language.

1. Automatic proof-support with iProver and Vampire, based on an encoding of proof obligations in TPTP format (ppTransTPTP). **experimental**

Open-sourced at <https://github.com/CLEARSY/pptranspog>.

1. Added Rust translator for software projects. **experimental**

Open-sourced at <https://github.com/CLEARSY/b2rust>.

1. Added custom proof obligation generator for optional Event-B proof obligations. This program is used on Event-B components when :
 - B resource ATB*POG*XSL_Processor is not equal to Saxon instead of Qt's XSL processor AND
 - Event-B specific proof obligations have been selected at project level.
2. Error messages shown in the component editor can be copied to the clipboard.
3. Added button to copy to the clipboard the command to start bbatch with a given workspace.
4. The dialog to save the interactive proofs in the User_Pass theory now includes check boxes to save in the component PMM file, in the component PUP file or in the project PatchProver file. If a file is unchecked and the file contained a User_Pass theory, this theory is not deleted.

5. Added project resource `ATB*ATB*Generate_UserPass_In_PUP`, updated project creation wizard to include the choice to set the resource to True or False.
6. Added setting to display host name in the title of the main window.

3 Documentation

1. Documentation reorganized in Help menu.
2. Documentation for Event-B support has been updated with closing implementations (syntax and proof obligations).

4 Miscellaneous changes

1. Reorganized installation layout.
2. New POG : Reversed order of operands in the implicit gluing invariant induced by refinement by homonymy.

Improves compatibility with legacy proof obligation generation.

1. New POG : Added attributes to IBXML format to improve traceability to source code.
2. New POG : Normalization of abstract set hypotheses. Hypotheses $ENS \neq \{\}$ are no longer issued, in favour of $\text{not}(ENS = \{\})$.

Improves compatibility with legacy proof obligation generation.

1. In the UserPass creation dialog, when the focus is on the Finish button, typing the Enter key now results in finishing the dialog.
2. Resource `ATB*PR*Enable_WD_Command` is reestablished.
3. Unnecessary calls to arithmetic solver in OPR tool have been removed.
4. The user may now cancel closing the interactive prover (if some interactive proof commands have been issued).
5. Open workspaces are now displayed in bold.

5 Bug fixes

1. Edition is no longer disabled on opening multiple-file selection
2. Opening a locked project no longer crashes the GUI.
3. In the interactive prover, it is possible to set up SMT solvers path with spaces.
4. Improved communication robustness between GUI and bbatch core functionalities.
5. Improved stability on Windows platform.
6. `ATB*PR*BRPR_Path` in project configuration is honored

7. Typos in Event-B manual fixed (reported by M. Benveniste).
8. Improved robustness of proof mechanisms when a driver crashes.
9. New POG : fixed translation from POG to PO for the enumerations.
10. Fixed error reporting when generating code already generated.
11. BXML generation for n-ary substitutions.
12. Normalization of ASSERT in type checker.
13. Arguments to the bb (loop) command in interactive proof are now saved in the correct order.
14. Fixed constant values in pptransmt translator.
15. The size of the horizontal scroll bar for the proof tree view is now correct.
16. GUI does not crash when receiving corrupted XML data from bbatch in internal interactions, producing diagnostic information instead.
17. Improved selection of hypotheses in translator pptransmt.
18. Force(Rapide) is now handled for projects in NG mode (i.e., in the format pos).
19. Operator iterate is now correctly rendered from the proof obligation view in the component editor.
20. Fix in rules created by SMT hammer in interactive proof.
21. Improved support for inlined operation calls and imports in NGOP.
22. Miscellaneous corrections to the proof mechanism writer ppTransSmt.
23. Checking B0 conditions in the type checking phase is disabled for system projects.
24. Fixed tool path in Atelier B configuration for Windows.
25. Several fixes in creation and extraction of project archives.
26. Improved integration of arithmetic prover in simplification and normalization of proof obligations.
27. When using the new POG on implementations with import clauses, the corresponding proof obligations are now accessible in the interactive prover.

6 Deprecated

1. Old Atelier B user manual was obsolete and is no longer distributed.
2. Translations have been dropped out.