



Razorcat Development GmbH  
Witzlebenplatz 4  
14057 Berlin  
Germany

### Technical Support

phone +49 - (30) - 536 357 0  
fax +49 - (30) - 536 357 60  
email [support@razorcat.com](mailto:support@razorcat.com)  
www <http://www.razorcat.com>

## Release Notes

### Release v4.1.12 (34 items)

#### CTE

TES-2435

FIX interface variables are not updated for open CT editors.

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#### CTE

TES-2523

Fixes a bug where discarding of CTE documents with multiple open refinements failed.

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#### CTE

TES-2525

#### *New Feature*

CTE-330 Now comments are listed in the outline view: A separate comments list contains all comments visible in the currently focused editor (e.g. the main diagram or an refinement). Additionally the comments are shown in the diagram tree on root node and refinement level.

CTE-346 FIX error in arrow layout where subtrees overlap each other.

CTE-350 In the previous version the mark guideline was not highlighted on mark mouse hover.

CTE-353 Now test case marks will only be copied between diagram views of the same resource.

CTE-366 Now a description property field for tree items is available in the Properties view. Description data from legacy CTE files is imported.

CTE-367 Now a description field for test sequence and test group items is available in the properties view.

CTE-368 Now a revert of changes behaves as expected. After a revert all changes are resetted and the open editors are not marked as dirty.

CTE-369 Import now removes illegal XML characters from name and description.

CTE-370 In previous CTE versions the import uses generically extended names although no name collision is present.

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#### Compiler/Target/Microcontroller

TES-2224

#### *New Feature*

New AVR GCC compiler from Microchip in conjunction with MPLAB X.

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#### Compiler/Target/Microcontroller

TES-2475

#### *Enhancement*

Improved low level TESSY-debugger communication tests.

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**Release v4.1.12 (34 items)**

**Compiler/Target/Microcontroller**

TES-2522

Adapted FreeScale Metrowerks S12Z for use with CLANG parser.

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**Compiler/Target/Microcontroller**

TES-2524

Added data type long long to IAR M16C compiler.

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**Compiler/Target/Microcontroller**

TES-2538

Updated and fixed Code Warrior HC08 makefile templates.

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**Driver**

TES-2445

Fixed generating code for arrays of structs/unions declared inside structs.

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**Driver**

TES-2509

Fixed evaluating addresses inside structs for pointers to different targets with same address (e.g. first component of a substruct and substruct).

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**Driver**

TES-2542

Fixed generated stub dummy return type fro struct/enum when 'Enable User Includes' is true.

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**Driver**

TES-2565

An erroneous cast was generated, when a memory modifier length exceeds five characters.

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**Instrumenter**

TES-2520

Fixed instrumenting return statement with preceding `_Pragma` directive.

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**Instrumenter**

TES-2544

Fixed wrong instrumentation if a function to stub is used inside an initializer list.

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**Interface Database (IDB)**

TES-2516

Fixed show/hide static and inline functions in module.

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**Interface Database (IDB)**

TES-2526

Fixed possible error in Interface Database for pointer pointer after analyze/reuse.

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**Interface Database (IDB)**

TES-2533

Fixed that change of data type requires a manual reuse.

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## Release v4.1.12 (34 items)

### Interface Database (IDB)

TES-2546

Fixed comparing IDB with array parameter used as pointer and UNKNOWN interface objects.

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### Interface Database (IDB)

TES-2566

Fixed adoption of passing changed by user when option 'Update passing directions on module analysis' is disabled.

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### Makefile Templates

TES-2536

Regarding defines for IAR AVR/IAR AVR32 during module analysis.

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*Enhancement*

### Notes View

TES-2563

Notes assigned to modules, test objects or test cases will now display the full path (test collection/folder/module/test object) within the test project as source object name within the notes view and overview reports.

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*Enhancement*

### Parser

TES-2400

Fixed parsing pragma directives when CLANG is disabled.

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### Parser

TES-2496

Updated TKS file for ARM V5.

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*Enhancement*

### Parser

TES-2531

Fixed error analyzing source containing a class with inner union implementing a constructor.

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### Parser

TES-2570

Fixed possibly missing interface variables if a GCC assembler function is present.

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### Report

TES-2521

Inherited prolog/epilog was missing in details report of variant test objects.

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### Report

TES-2554

Hide the "Merge Details Reports Into One Document" report option when it is not applicable: Merging the reports is only possible for PDF format and when both the overview report and the details reports are generated within the same batch operation.

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### Report

TES-2558

Generating the test details report failed for not executed test objects with attribute "Timer Enabled" set to "true".

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## Release v4.1.12 (34 items)

### Save/Restore Database (TMB Files)

TES-2530

Fixed saving script files for testobjects where the name exceeded 255 characters.

### TESSY (General)

TES-2556

Use text ("x") instead of images for link marks when exporting link matrix and validation matrix contents to XLS.

*Enhancement*

### Test Data Editor (TDE)

TES-2380

Fixed setting pointer to array and creating dynamic object for pointer to array.

### Test Data Editor (TDE)

TES-2512

Fixd evaluating expressions when Data Format Hexadecimal or Binary is selected.

### Test Data Editor (TDE)

TES-2529

Fixed evaluating expressions resulting in negative values.

### Test Data Editor (TDE)

TES-2534

Ignore case when evaluating hexadecimal values.

## Release v4.1.11 (46 items)

### C++

TES-2426

Possible missing stub function if qualified template fields were present.

### C++

TES-2453

For method parameters of type "class", the name printed within the test report was always "\*\*this\*" and member variables of constructor parameters were not listed within the test report.

### C++

TES-2463

Fixed declaration of extern stub functions with class by value parameter.

### C++

TES-2472

Initialize reference member in generated default constructor.

### C++

TES-2478

If a template class has multiple overloaded operators starting with '<' (e.g. operator <) stubbing of the operator method could fail.

**Release v4.1.11 (46 items)**

**C++**

TES-2480

Fixed generating declaration of synthetic variable if the variables type is a struct declared inside a class.

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**C++**

TES-2487

Fixed problem with test classes that have a method parameter of class type with a referenced base class and member variables of the test class also of the base class type.

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**C++**

TES-2488

Fixed possible error when generating the test driver for class without member variable, or method that did not access any member.

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**C++**

TES-2492

Fixed generating test driver for test using class with const member.

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**C++**

TES-2497

Fixed generating test driver when methods of a typedef struct are stubbed.

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**C++**

TES-2502

Fixed generating get/set function prototypes for classes in different source files.

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**CTE**

TES-2440

Implemented rollback mechanism for CTE test data to avoid data loss in case of errors while saving.

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*Enhancement*

**CTE**

TES-2444

Fixed error opening CTE perspective when the interface contains a union that has passing IN/OUT with all components IRRELEVANT.

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## Release v4.1.11 (46 items)

### CTE

*New Feature*

TES-2507

CTE-233 Now the CTE supports comment nodes within the tree.

CTE-341 Now the mark selection behaviour can be switched (via preferences) between "mark should be enclosed" and "mark should be touched" to be part of the selection

CTE-343 Now older CTE files with empty refinements can be imported without error

CTE-340 New option to pin the layout of the imported diagram. Means that on import the root nodes of the diagram and all refinements will be pinned and the layout will not be altered by automatic layout as long as the pins are not removed by yourself.

CTE-173 Optimized the layout of dependencies in the diagram

CTE-332 The layout button now has an additional menu entry which triggers a layout of the entire document, i.e. all open and closed refinements of the document will be layouted.

CTE-339 Now a change of the first test table column width only moves the tree without relayouting all

CTE-323 Now we show an error symbol at the top of the test table column when any test case has a conflicting mark for the corresponding leaf node.

CTE-338 Numbers of test table items are not editable by the user anymore.

CTE-337 Tree nodes or test table items are selected after pasting them.

### Command Line (tessycmd)

TES-2417

tessycmd disconnect could fail and return an error code in rare cases.

### Command Line (tessycmd)

TES-2425

The command line operations "import" and "export" failed with an exception in situations where no "exec-test" operation has been performed on command line before.

### Command Line (tessycmd)

TES-2501

TESSYD does not consider --ignore-configuration-errors option.

### Compiler/Target/Microcontroller

*Enhancement*

TES-1430

Improved winIDEA adaption so that (optionally) one instance of the IDE can be used for all tests.

### Compiler/Target/Microcontroller

*Enhancement*

TES-1974

Implemented a modifiable communication transfer limit per test object test run.

### Compiler/Target/Microcontroller

*New Feature*

TES-2382

New combination for TASKING ARM C compiler and PLS UDE debugger.

### Compiler/Target/Microcontroller

TES-2447

Fixed accidentally deleted entry in Wind River PPC type table.

### Component Test

TES-1771

Generate master code without compiler warnings for component test using dynamic objects.

## Release v4.1.11 (46 items)

### Driver

*Enhancement*

TES-2350

Return a valid value in unused external stub functions to avoid compiler warnings.

### Driver

TES-2399

Generate a declaration to otherwise empty C driver files, since some compilers treat empty files as error.

### Driver

TES-2431

Delete files with endings specified in attributes "ObjFiles Extension" and "ExeFile Extension" before compiling test driver.

### Fault Injection

TES-2477

Possible erroneous fault injection if known functions were stubbed.

### Import/Export

TES-2469

Fixed import of return value of C++ functions with multiple parameters.

### Interface Database (IDB)

TES-2451

When a struct type modifier changed it was not always applied after analyzing the module.

### Interface Database (IDB)

TES-2454

Fixed error loading test data after reuse if a pointer pointer passing was set manually from IN->IRRELEVANT to IN->IN.

### Interface Editor (TIE)

*Enhancement*

TES-2422

Display typedefs for structs/unions within the type list of the "Create Variable" dialog within TIE.

### License Manager

TES-2493

If the log file size reached 80% of max size, any further log message contained garbage characters.

### Parser

*Enhancement*

TES-2094

Added CLANG support for the Cosmic STM8 compiler.

### Parser

TES-2412

Fixed parsing typedefs with integrated memory modifiers (e.g. typedef near struct str NEAR\_STR;)

### Parser

TES-2491

Fixed issue with `_Bool` in TASKING VX XC166 type table file.

## Release v4.1.11 (46 items)

### Report

TES-2401

Fixed short path names in coverage reports.

*Enhancement*

### Scenario Editor (SCE)

TES-2352

Component test scenarios may now already be created and edited without a work task assignment.

*Enhancement*

### Script Editor

TES-2498

Support C++ syntax for call trace in script editor.

### TESSY (General)

TES-2371

Use .ONESHELL target within makefile template to speed up make.

*Enhancement*

### TESSY (General)

TES-2423

Fixed potential exception when using the filter within the test project view.

### TESSY (General)

TES-2486

Fixed problem with disabled buttons within the attributes tab of the properties view.

### Test Data Editor (TDE)

TES-2446

Fixed calculating expressions for unsigned long long (64 bit) integers.

### Test Data Editor (TDE)

TES-2448

New test interface setting in preferences: 'Enable expression overflow checking'. Uncheck to disable checking for value overflow when entering/importing expressions as test data.

*Enhancement*

### Test Data Editor (TDE)

TES-2459

Fixed handling of character literals like 'a' within TDE test data and script editor.

### Test Data Editor (TDE)

TES-2466

Fixed evaluation of expressions containing the "~" operator (e.g. ~6).

### Test Data Editor (TDE)

TES-2481

If there are no parameter names in the signature of a constructor and a dynamic object was created for the class, no test data could be saved for these parameters.

### Test Evaluation

TES-2470

Fixed evaluation of very long advanced stub vector values.

## Release v4.1.10 (70 items)

### ASAP Conversion

TES-2321

Invalid A2L files (e.g. with missing COEFFS entry for COMPU\_METHOD entries) could cause TESSY to be terminated whenever the conversion was invoked (e.g. when importing or entering test data for ASAP variables).

### ASAP Conversion

TES-2390

Conversion methods of type RAT\_FUNC with coefficients containing relevant digits after the decimal marker (e.g. "1.234") could cause the decimal places being ignored and though incorrect physical values being imported or input as test data within TDE. If the numeric locale of the computer uses another decimal marker than "." then this error could occur (e.g. with german language settings).

Also the ASAP options have been renamed as follows to be able to provide them as environment variables to the TESSY process:

- ASAP\_NO\_FLOAT\_CONVERSION (Skip the conversion for float type variables)
- ASAP\_TRACE\_CONVERSION (Emit trace outputs for conversions)
- ASAP\_ROUND\_VALUES (round converted values instead of truncating the decimal places)

### C++

TES-2233

Fixed generated code for dynamic structures from a pointer declared in a different source than a pointer targeting an address inside the structure.

### C++

TES-2289

Fixed possible error calculating coverage for classes containing template methods.

### C++

TES-2328

Fixed erroneous test driver for pointer members in class references.

### C++

TES-2342

Fixed generated code for constructor with a class reference parameter of a class also having a constructor with class reference parameter.

### C++

TES-2414

Fixed generating test driver if a class is derived from a struct typedef.

### C++

TES-2415

Fixed invalid interface database if a superfluous typedef is used.

### CTE

TES-2181

Display the execution results of test cases within the CTE editor test table.

**New Feature**

**Release v4.1.10 (70 items)****CTE****Enhancement**

TES-2284

CTE-321 Decorations for Refinements are closer to its corresponding nodes.

CTE-320 Now conflicting marks are drawn in red with a white inner dot, such that a difference to other non-conflicting marks is also visible for color blind users.

CTE-313 The Delete button in TESSY operates in CTE documents.

CTE-312 Now on change of first column width in the test table the tree will be relayouted. To keep an individual layout it's recommended to pin the tree nodes in the tree before changing the test table column width.

CTE-307 The title of the CTE will be updated when the root node changes its name.

CTE-302 Now "Undo" for "Define Parent" is available

CTE-280 Now a layout defined on a specific tree node is inherited by the sub tree. The inherited layout can be overwritten or reseted to the inherited parent layout.

CTE-273 In new refinements Dependencies are now layouted.

CTE-161 Add preferences for "Vertical distance between leaf class nodes" and "Horizontal node shift" in Space Saving layout.

**CTE**

TES-2306

Fixed an error when test data for multiple variables was initialised at once.

**CTE**

TES-2316

Fixed error that saving a CTE documents deletes a call trace.

**CTE****Enhancement**

TES-2387

CTE-88 Now preferences for validation checks are available.

CTE-57 Validation check warnings will be displayed on tree and table items.

CTE-327 Add toolbar button to validate the current CTE document.

CTE-160 Optimized layout algorithm for some corner cases.

CTE-139 Now a new layout "ARROW\_LAYOUT" mix of normal and space saving layout is available.

CTE-324 Refinements are again called "Refinement" and all occurrences of the concept "View" are replaced. Moreover the icons related to Refinements are adapted to visualize the concept of refining an aspect.

**CTE**

TES-2391

CTE-326 Fixed the indentation of nested compositions in test specifications.

**CTE****New Feature**

TES-2392

TESSY now uses an optional "project.css" file in its configuration folder for all CTE documents in the current TESSY project.

**Command Line (tessycmd)****Enhancement**

TES-589

Relative path names can now be passed as arguments to tessycmd.

**Command Line (tessycmd)**

TES-2386

The 'save-db' command was erroneously disabled internally and did nothing.

## Release v4.1.10 (70 items)

### Command Line (tessycmd)

TES-2404

Fixed "set-environment" command: The environment was always applied to all modules of the current project regardless of the current selection within tessycmd.

### Compiler/Target/Microcontroller

*New Feature*

TES-946

New combination for TI ARM compiler with iSYSTEM winIDEA debugger.

### Compiler/Target/Microcontroller

*Enhancement*

TES-1197

Added CLANG support for TASKING XC166 VX.

### Compiler/Target/Microcontroller

*New Feature*

TES-1566

New combination for Green Hills MPC compiler with PLS UDE debugger.

### Compiler/Target/Microcontroller

*New Feature*

TES-2257

Added C++ support for Microchip XC32 with MPLAB X.

### Compiler/Target/Microcontroller

TES-2280

Fixed 64-bit issue concerning original binary test with winIDEA.

### Compiler/Target/Microcontroller

*New Feature*

TES-2285

New combination for Green Hills TriCore compiler with PLS UDE debugger.

### Compiler/Target/Microcontroller

TES-2295

Fixed 66 makefile templates to comply with new make version.

### Compiler/Target/Microcontroller

TES-2303

Fixed communication makefile of GHS v850 / TRACE32.

### Compiler/Target/Microcontroller

TES-2307

Updated winIDEA / Green Hills MPC makefile template.

### Compiler/Target/Microcontroller

TES-2315

Added board files section for Tasking VX XC166 / Lauterbach TRACE32 makefile template.

### Compiler/Target/Microcontroller

*Enhancement*

TES-2318

Added CLANG Support for Atollic ARM compiler.

## Release v4.1.10 (70 items)

### Compiler/Target/Microcontroller

**New Feature**

TES-2343

New combination for TASKING ARM C/C++ compiler and TASKING VX debugger.

### Compiler/Target/Microcontroller

**Enhancement**

TES-2411

Improved CLANG support for WindRiver compiler.

### Driver

TES-2394

Synthetic variable declarations were missing in stubs of extern functions with multiple source files and test object and called extern function in different source files.

### Environment Editor (TEE)

TES-2331

Fixed wrong type of "Type Include List" and "Type Exclude List" attributes which prevented these attributes to be applied correctly.

### Environment Editor (TEE)

TES-2366

Removed erroneous "--win32" entries within some environment configurations.

### Import/Export

TES-2376

The following PTU file entries had problems when importing:

```
ARRAY abc[0..7][0..3], INIT= [[1,2,3,4],[5,6,7,8]]  
ARRAY abc[0..7][0..3], INIT= 42
```

The first case was completely skipped while in the second case not all combinations of array indices were assigned.

### Instrumenter

TES-2338

Fixed instrumentation problem with assignment statements containing logical expressions.

### Interface Assigner (IDA)

TES-2304

Fixed an exception that occurred when analyzing a module with still open assign views within the IDA perspective.

### Interface Assigner (IDA)

TES-2312

Fixed automatic assignment of enum constants in typedefs when switching to CLANG parser.

### Interface Assigner (IDA)

TES-2347

Fixed automatic assignment of global variables in module reuse.

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## Release v4.1.10 (70 items)

### Interface Database (IDB)

TES-2319

Fixed loss of "use array parameter as pointer" information during automatic reuse.

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### Interface Database (IDB)

TES-2326

Fixed setting const variables IRRELEVANT within migrated interface databases of TESSY versions before v4.1.7.

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### Interface Editor (TIE)

TES-2314

Fixed possible Null Pointer Exception when moving a variable or function from unused to used section.

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### Interface Editor (TIE)

TES-2410

Fixed validation in "Create Variable" dialog in test interface editor TIE.

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### Parser

TES-866

Added \_\_inline to Green Hills type table file.

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### Parser

TES-2310

Extern variables were missing in interface if declared inside a function body.

---

### Parser

TES-2311

Added parser option -write-init-collector to collect external variables that are used to initialize a global variable which is not used by any test object.

---

### Parser

TES-2324

Fixed erroneous type modifier at return type for Cosmic compiler.

---

### Parser

TES-2330

Fixed possible invalid characters in IDB files, when a second file contains a function template specialization.

---

### Parser

TES-2360

Parameter accessed only in a void cast statement are considered IRRELEVANT.

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### Parser

TES-2363

Fixed parsing asm output constraint '= @ccc'.

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## Release v4.1.10 (70 items)

### Parser

TES-2403

Fixed a possible stack overflow that could occur if an expression with too many nested brackets is used. If the error 'bracket nesting level exceeded maximum of 256' now occurs when analyzing the module, then the option '-fbracket-depth=N' (e.g. -fbracket-depth=512) must be set in the 'Parser Options' attribute.

### Parser

TES-2405

The parser error 'passing ... changes address space of pointer' was fixed. This error occurred if a function in the parameter list had an address space modifier [e.g. void callee (void near \*p);], but the current parameter in the call did not.

### Requirements

TES-2317

Bugfix for ReqIF import and export. Handling of document title options, structure import and document matching improved.

### Requirements

TES-2416

Bugfix for ValidationException during requirement document export.

### TESSY (General)

*New Feature*

TES-932

Doxygen comments within the source files can now be analyzed and imported as test specification for test objects. This feature can be activated using the module attribute "Enable Doxygen". Refer to the respective application note for details.

### TESSY (General)

TES-2190

Fixed problem with icon rendering on computers with >100% windows font scaling. This fix was erroneously already reported for version v4.0.23 and v4.1.7 of TESSY.

### TESSY (General)

TES-2301

Fixed startup problem of TESSY v4.0 (missing "fls.conf" file) when installed on a computer with already installed TESSY v4.1.

### TESSY (General)

TES-2322

Fixed possible TESSY startup error on computers with low performance.

### TESSY (General)

TES-2359

Fixed painting artefacts when resizing coverage columns within test project view and result columns within test item view.

### TESSY (General)

TES-2362

The default setting in "/etc/nsswitch.conf" caused the startup of MSYS2 processes to take a very long time if the computer is a member of a poorly configured domain with AD. The default "db" entries within this configuration file will now be removed when installing TESSY.

## Release v4.1.10 (70 items)

### TESSY (General)

TES-2374

Creating support files could fail due to blocking of "CoFreeUnusedLibraries" native method.  
In TESSY.ini set `-Dorg.eclipse.swt.internal.ole.win32.FreeUnusedLibraries=false` to prevent the method call if TESSY freezes when creating a support file.

### Test Data Editor (TDE)

*Enhancement*

TES-2221

Added validation of test data expressions regarding minimum and maximum values of the respective variable data type (formerly only numeric values were checked). This enhanced checking will now be applied when entering test data within TDE, importing test data or during a reuse operation where the data type of a variable may have changed. Invalid test data will be rejected or marked as invalid.

### Test Data Editor (TDE)

TES-2308

Fixed missing Constructors after selecting another test object of the same class.

### Test Data Editor (TDE)

TES-2332

Fixed using defines in generator test case range expression.

### Test Data Editor (TDE)

TES-2333

Fixed potential problems with defines or enum constants used within test data expression values. If such defines or enum constants were removed from the source code and a reuse operation was performed, such expressions were marked as invalid. Subsequent changes of usercode or other test data values in combination with further source code changes and another reuse operation without intermediate execution of the tests could lead to unintended automatic changes and revalidation of the invalid expressions.

### Test Data Editor (TDE)

*Enhancement*

TES-2335

The "Next/Previous Undefined Value" buttons within TDE will now also find any invalid test data.

### Test Execution

TES-2327

Test objects might be not executed in batch test due to a race condition when reading CVS information from source files.

### Test Execution

TES-2345

When a test with Wind River WindISS was aborted, the affected test object was not executable anymore.

### Usercode Editor (UCE)

TES-2369

Usercode (stub code and prolog/epilog) could be corrupted after a reuse operation and subsequent changes of usercode. This could happen in the following cases:

- If constants of enum types were used in usercode which are only available within the signature of external called functions.
- If variables, enum constants or defines used within usercode were renamed and not properly assigned within IDA during the reuse operation.

## Release v4.1.10 (70 items)

### Variant Management

TES-1847

Fixed problems with inherited values being overwritten with values with changed evaluation modes. If only the evaluation mode and not the value of a variable was changed within a variant module, the respective variable value being show within TDE was still the inherited value. Also, if evaluation mode and value was changed, the inherited value being shown within the tooltip showed the wrong evaluation mode.

## Release v4.1.9 (12 items)

### C++

TES-2255

If a class has a function template and a method with the same name, the intrumenter was not able to instrument that method.

### C++

TES-2294

Fixed generating driver for pointer pointer to class.

### C++

TES-2297

Fixed displaying names of dynamic classes within TDE.

### C++

TES-2298

Fixed showing constructor selection box within TDE.

### C++

TES-2302

Editing test data for members of dynamic classes with pass direction INOUT was impossible.

### Compiler/Target/Microcontroller

TES-2282

Fixed makefile template for GNU Tools for ARM.

### Driver

TES-2278

Fixed DS-5 master makefile.

### Interface Assigner (IDA)

TES-2296

New enum constants shall not display a warning within the new interface of a test object.

*Enhancement*

### Interface Database (IDB)

TES-2290

Fixed possible loss of test data for advanced stub variables during automatic reuse.

## Release v4.1.9 (12 items)

### Report

TES-2254

A scheme file (XSD) for the test overview report is now available within the bin\plugins\com.razorcat.tessy.reporting.templates\_4.1.9\schemafiles folder of the TESSY installation.

### Report

TES-2320

Errors during report generation could be caused by too long file names being generated for C++ test objects: The C++ test object name contains the full name space qualification plus the signature which result in very long file names for the report files. The \$(TESTOBJECT) token for the report file names now contains only the simple method name plus the internal ID of the test object. Another \$(TESTOBJECT\_FULL) token is available which contains the full name as before.

### TESSY (General)

TES-2288

Fixed exception when creating support files.

## Release v4.1.8 (47 items)

### ASAP Conversion

*Enhancement*

TES-2226

Provide ASAP information and conversion from A2L file also for synthetic variables.

### ASAP Conversion

TES-2238

Fixed potential crashes of ASAP parser causing the module analysis to fail.

### C++

TES-2265

Fixed problem with recursive classes causing the test driver master to crash.

### C++

TES-2273

Generate possibly needed destructor to union containing dynamic objects.

### CTE

*Enhancement*

TES-1890

CTE preferences are now saved in the TESSY project.

### CTE

TES-2154

The test data decoration in CTE documents is now visible instantly after a value was entered (i.e. the inline editor has been closed) in the test data view.

### CTE

*Enhancement*

TES-2274

- Reset layout preferences to default is available now.
- Now the test item column width and test table height can be saved to/for each CTEX file.
- The performance of moving subtrees between refinements was optimized.

## Release v4.1.8 (47 items)

### Command Line (tessycmd)

*Enhancement*

TES-2104

Enabled CSV export format for command line export.

### Compiler/Target/Microcontroller

TES-2054

Fix CLANG parser error concerning Green Hills V850 compiler.

### Compiler/Target/Microcontroller

*New Feature*

TES-2251

New combination for ARM V6 with TRACE32.

### Coverage Viewer (CV)

*Enhancement*

TES-1702

Show names of test cases and test steps within the C0/C1 coverage test item lists within the CV perspective.

### Defines

TES-2264

Defines that are using values from other defines could be missing after module analysis.

### Driver

TES-2211

Fixed problem with stubbing of external functions that are wrapped with certain pragma directives. If the compilation fails due to differing pragma directives, setting the module attribute "Insert External Stub At Declaration" changes the location of the generated stub code which will result in using the pragmas valid at the declaration location of the external function being stubbed.

### Driver

TES-2232

Fixed missing send/receive function prototypes for structures in case of multiple source files within a module.

### Driver

TES-2234

Fixed wrongly generated test driver if test object parameter names conflicted with structure component names.

### Driver

TES-2236

If a define was used in the user code for which the parser could not calculate a value, then the test driver failed to compile.

### Import/Export

TES-2281

Fixed import of anonymous struct/union components

### Instrumenter

TES-2246

Fixed instrumenting methods returning a struct pointer.

## Release v4.1.8 (47 items)

### Interface Assigner (IDA)

TES-2247

Fixed problems with test objects containing CTE test specifications:

- Reuse of renamed test objects failed.
- An exception occurred when assigning a test object to another test object.

### Interface Assigner (IDA)

TES-2258

Fixed reuse of synthetic variables.

### Interface Assigner (IDA)

TES-2275

Fixed error reusing a test object from old parser containing an array parameter used as pointer when analyzed with new CLANG parser.

### Interface Database (IDB)

TES-2271

Fixed potential exception when comparing test objects with array types as parameters during module analysis.

### Interface Database (IDB)

TES-2286

Fixed possible loss of test data for advanced stub variables during reuse.

### Interface Editor (TIE)

TES-2248

Fixed potential exception within TIE for testobjects calling functions with array references as parameters that are used as advanced stubs and the attribute value of "Enable CLANG" set to false.

### Interface Editor (TIE)

TES-2276

Set const array pass direction not editable when CLANG is disabled.

### Interface Editor (TIE)

TES-2277

Fixed error displaying array parameter used as pointer.

### Parser

TES-2173

Fixed \_\_in64 parser error for ARMv5 using CLANG parser.

### Parser

TES-2219

Added support for global anonymous unions.

*Enhancement*

### Parser

TES-2266

Fixed internal parser problem causing the message "/usr/bin/bash: line 0: [: too many arguments" appearing during module analysis if the project root contains blanks.

## Release v4.1.8 (47 items)

### Parser

TES-2272

Functions that are called without a prototype were missing within the interface database.

---

### Project Handling

TES-1801

Changing the SOURCEROOT of a project from a directory inside the PROJECTROOT to a directory outside the PROJECTROOT was not persisted within the PDBX file.

---

### Report

TES-2156

Optimized parsing of CVS infos from source and header files.

---

*Enhancement*

### Report

TES-2230

Fixed possible race condition when creating test reports causing the report generation to fail.

---

### Report

TES-2260

Fixed problems with merging PDF files of test details reports into the overview report in case of single test details reports could not be generated. Also an existing "fileList.xml" index file within the report output directory caused any listed and existing PDF files being unintentionally merged into the currently generated overview report.

---

### Save/Restore Database (TMB Files)

TES-976

Save and restore of static analysis preferences added.

---

*Enhancement*

### Save/Restore Database (TMB Files)

TES-2268

Fixed missing user code when importing v2.9 TMB module archives.

---

### Scenario Editor (SCE)

TES-2241

Refresh work task view after interface changes (e.g. after creating a synthetic variable).

---

*Enhancement*

### TESSY (General)

TES-1264

Validate compiler and target install paths before analyzing modules.

---

*Enhancement*

### TESSY (General)

TES-2222

Prevent to create attributes on test collection or folder level because such attributes will not be persisted when backing up the project.

---

### TESSY (General)

TES-2231

TESSY failed to expand \$(ProgramFilesx86) environment variable.

---

## Release v4.1.8 (47 items)

### TESSY hardware adapter interface (THAI)

TES-2245

Fixed problems reading interface databases with THAI signal definitions.

---

### Test Data Editor (TDE)

TES-1048

Fixed random test data initialization with given ranges for unsigned long variables: Allow up to maximum unsigned long value.

---

### Test Data Editor (TDE)

TES-1873

Fixed conversion of data format to "String" for integer arrays. The data format for all array elements will now correctly be "Character".

---

### Test Data Editor (TDE)

TES-2244

Fixed missing updates of user code views (especially call trace view) on creation of views and on certain subsequent selections within test project, test item and test data views.

---

*Enhancement*

### Test Data Editor (TDE)

TES-2263

Functions that were called directly by the test object were not visible in the available functions list of the call trace view if they were also called by stubbed functions.

---

### Variant Management

TES-2174

Fixed an issue where CTE diagrams in detail reports weren't current after a module variant had been synchronized. This issue was erroneously already reported as fixed in version v4.1.7.

---

### Variant Management

TES-2225

Copy fault injections from the parent module when synchronizing variant modules for the first time.

---

## Release v4.1.7 (20 items)

### C++

TES-2201

The generated functions of the test driver application contained invalid characters for test objects with arrays of templates.

---

### C++

TES-2205

An invalid test driver was generated for templates using the bool type.

---

### CTE

TES-2188

Fixed an issue where the CTE showed test data indicators of component test data on random nodes in tree.

---

## Release v4.1.7 (20 items)

### CTE

TES-2214

Multi selection of test item marks via selection tool and mouse drag is possible now.

---

*New Feature*

### CTE

TES-2215

Fixed display of invalid test item marks after restructuring the tree.

---

### CTE

TES-2216

It is now possible to move tree nodes from the outline into a refinement view.

---

*New Feature*

### CTE

TES-2217

The width of the first column in the test table is now adapted when zooming. All connection lines between leaf nodes and marks will be painted correctly now.

---

*Enhancement*

### Command Line (tessycmd)

TES-814

Improved handling of license problems in TESSY headless mode.

---

### Compiler/Target/Microcontroller

TES-2145

New TASKING C/C++ compiler for ARM adapted in conjunction with Lauterbach TRACE32.

---

*New Feature*

### Defines

TES-2204

Missing values for defines, if there is a comment behind the define. [e.g. #define One 1 /\* this is one \*/]

---

### Driver

TES-2196

Testing memset with instrumentation was not possible.

---

### Fault Injection

TES-2218

Fixed discard of changes when editing fault injections and switching to another perspective.

---

### Interface Database (IDB)

TES-606

Optimized compare/merge operations when analyzing modules.

---

*Enhancement*

### Interface Database (IDB)

TES-2192

The tag name was missing at recursive structs.

---

### Parser

TES-2252

Fixed computing array size if sizeof struct is used as array size.

---

## Release v4.1.7 (20 items)

### TESSY (General)

*Enhancement*

TES-1139

Dynamically choose a port for communication with the DERBYD database demon process to avoid port conflicts when running different TESSY versions concurrently.

### Test Data Editor (TDE)

TES-2186

Fixed setting actual as expected value for expressions.

### Variant Management

*Enhancement*

TES-1763

Test details report now optionally contains variant information.

### Variant Management

TES-2202

Correctly initialize the inherited call trace for variant test steps when the attribute "Default Call Trace Evaluation" is overwritten in the environment editor TEE.

### Variant Management

TES-2209

Fixed an issue where CTE test cases were removed from variant test objects when synchronizing.

## Release v4.1.6 (22 items)

### CTE

*New Feature*

TES-1210

The new implementation of CTE is a full featured eclipse-based editor integrated into TESSY which enhances the design of test cases and assignment of test data to tree nodes.

Legacy CTE trees will be updated and converted to the new CTEX file format automatically when they are opened for editing.

### Command Line (tessycmd)

*Enhancement*

TES-697

TESSY comand line tool now supports export and import of test data in YAML format.

### Command Line (tessycmd)

*Enhancement*

TES-2009

Optimizations for command line mode:

- 1.) tessycmd select-project is not necessary any more if the project has been provided as argument to tessyd.exe or if a project is already open within the GUI.
- 2.) tessycmd connect doesn't return an error if it is already connected.
- 3.) tessycmd exec-test with new option -output denoting a directory where generated report XML result files (overview and details reports) will also be copied to.

## Release v4.1.6 (22 items)

### Coverage Measurement

**Enhancement**

TES-1757

The cumulated coverage results of modules, folders and test collections are now calculated based on the unreached coverage totals of all not executed test objects plus the achieved coverage of executed test objects. The hitherto behavior of summarizing the coverage of all EXECUTED test objects can be activated by disabling the coverage totals metrics within the metrics preference page.

### Coverage Viewer (CV)

**New Feature**

TES-940

The flow chart of a test object is now already available before test execution.

### Environment Editor (TEE)

TES-2167

Improve the transfer of settings from the environment.

### Fault Injection

**New Feature**

TES-1461

Fault injection feature provides means to inject code in order to execute normally unreachable code branches.

### Interface Editor (TIE)

**New Feature**

TES-1642

Support selecting and editing multiple objects in TIE.

### Metrics

**New Feature**

TES-308

Static analysis added: Calculation of cyclomatic complexity (McCabe) and derived metrics are now available for each test object. They are optionally shown within the test project view and documented within the test reports.

### Report

**Enhancement**

TES-1829

TESSY will now always create CTE diagrams with the new JAVA based CTE.

### Report

TES-1999

A scheme file (XSD) for the test details report is now available within the bin\plugins\com.razorcat.tessy.reporting.templates\_4.1.6\schemafiles folder of the TESSY installation.

### Report

**Enhancement**

TES-2078

Write variable type and type modifier to test details report XML file.

### Save/Restore Database (TMB Files)

**Enhancement**

TES-1711

Added preference option to automatically create module backups when closing TESSY.

## Release v4.1.6 (22 items)

### Save/Restore Database (TMB Files)

***New Feature***

TES-1941

The new test scripting language provides the means to store the test contents for each test object as ASCII file beside the binary module archive (TMB file). This allows easy versioning of tests and comparison of arbitrary versions using a version control system. For reviews of tests, changes can easily be found using standard ASCII diff tools.

### Scenario Editor (SCE)

TES-2045

Fixed problems within SCE when editing and displaying scenario specific work task configurations.

### Script Editor

***New Feature***

TES-1448

The new script perspective allows to edit tests within an ASCII editor using a dedicated test scripting language. All test data can be converted from the script format to the TESSY internal format and vice versa. The ASCII format can also be used as complementary backup format besides the hitherto TMB file format.

The script editor provides syntax highlighting, auto completion, formatting, validation and an outline view.

### TESSY (General)

TES-1778

Store project specific preferences in their own file within the project location.

### TESSY (General)

***Enhancement***

TES-2090

Timing measurement configuration prepared for GNU/GCC and updated documentation with necessary steps to adapt the C166 based measuring procedure for other microcontrollers.

### TESSY hardware adapter interface (THAI)

***New Feature***

TES-32

In order to enable hardware I/O stimulation and measurement during unit testing, TESSY provides a hardware adapter interface allowing control of external measurement hardware.

### Test Data Editor (TDE)

***New Feature***

TES-320

The TDE allows to enter arithmetic expressions as test data values. The resulting value of an expression will be calculated and updated on code changes. The following operators are supported: Addition, subtraction, multiplication, division, modulo, shift, binary or/and/not. The operands can be numbers, defines and enum constants.

### Test Data Editor (TDE)

***Enhancement***

TES-934

Allow assignment of enum constants to integer type variables within TDE.

### Variant Management

TES-2033

Save and restore timestamps for modules to prevent variant modules from always being out of date after they have been restored.