

TPT Severe Issues

Introduction

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The following document contains a list of known severe issues of TPT. By severe issues we mean issues/bugs in particular versions of TPT that:

1. might cause malfunctions in the behavior of TPT
2. are hard or even impossible to find by the TPT user herself/himself
3. cause the risk that bugs/defects in a SUT (system under test) are not detected by TPT in cases where TPT would have been able to reveal these bugs/defects in the SUT without the aforementioned malfunction in the behavior of TPT.

Usually there severe issues address the situations where the problem might appear and have well-defined workarounds.

ISSUE # 26884

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TITLE:

Local search and replace in step lists always replaced all occurrences in table steps at once and so may replace entries unnoticeably the user did not intend to change.

ISSUE DETECTION:

15-Jul-19

AFFECTED VERSIONS OF TPT:

TPT 12 - TPT 13

PRECONDITIONS:

A step list including a table step with multiple occurrences of a search term and trying to replace one of these.

DETAILS:

If a search term occurs multiple times in a table step trying to replace one of them using the search dialog always replaces all occurrences in the table step. Generally, the issue affects all tables embedded in other tables but the table step is the only one where this condition applies.

EFFECT OF THE ISSUE:

Due the unexpected behavior of search and replace more changes than intended may be done to table steps leading to unintended TPT model behavior.

WORKAROUND:

Using global search and replace to replace occurrences of a search term in table steps. Changes done by local search and replace affecting table steps have to be reviewed carefully.

RESOLVED IN:

TPT12u3, TPT13u2

ISSUE # 26796

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TITLE:

If explicit array-of-struct values are being used in TPT models (e.g. "mychannel := [{2,3},{4,param+5}]") these expressions can compute wrong values at runtime if the array-of-struct expression refers to non-constant channels or parameters.

ISSUE DETECTION:

01-Jul-19

AFFECTED VERSIONS OF TPT:

TPT 12 - TPT 13

PRECONDITIONS:

TPT computes wrong values at runtime under the following conditions:

- an explicit array-of-struct value is assigned to a channel or parameter (e.g. in a step list) AND
- the array-of-struct value itself depends on channels/parameters AND
- these channels/parameters are not constant (at runtime) AND

- these channels/parameters have values that differ from their default values (as specified in the declaration editor)

DETAILS:

In the special case of explicit array-of-struct expressions (e.g. "mychannel := [{2,3},{4,param+5}]") any reference to channels/parameters inside this expression will not be computed dynamically (at runtime), but computed just once when initializing the expression (before runtime). Therefore, if the value of channels/parameters that are referred inside this expression changes at runtime, the array-of-struct expression will not update its value.

The fix now explicitly prohibits the usage of

- (a) references to all channels
- (b) references to all parameters that are modified dynamically in the test model

inside any explicit array-of-struct expression. Otherwise the TPT compiler will raise a compile error.

EFFECT OF THE ISSUE:

In the special case of explicit array-of-struct expressions (e.g. "mychannel := [{2,3},{4,param+5}]") with references to non-constant channels or parameters, the value of the array-of-struct expression gets stuck with its initial value for all points in time even if the referred channels/parameters change.

After the fix related to this issue, those expressions are denied by the compiler.

WORKAROUND:

Instead of assigning the whole array-of-struct use individual assignments for non-constant elements.

RESOLVED IN:

TPT12u3, TPT13u2

ISSUE # 24165

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TITLE:

TPT-VMAPI corrupts values at runtime for array input or read/write output channels that have a specified dimension in TPT less than the specified dimension in the SUT(C code).

ISSUE DETECTION:

11-Jun-18

AFFECTED VERSIONS OF TPT:

TPT 8 - TPT 12

PRECONDITIONS:

- Test execution by means of EXE-platform, CANoe-platform, ASCET- platform (excluding ASCET@FUSION), C-code-platform.
- Test model contains array channels (including struct channels containing arrays or array channels containing structs) that are configured as input channels.
- The dimension of these array input channels in TPT is smaller than the dimension in the SUT.

DETAILS:

Assume that the test model uses the feature of TPT which allows the dimension of array channels in TPT (logical dim) to be smaller than the dimension in the SUT (physical dim). If one or many of such the array channels are read from the SUT to TPT per test cycles (periodically) during test execution TPT potentially corrupts some *other* channels/parameter values at runtime. For each test model the number of affected channels/parameters is fixed, but unpredictable.

EFFECT OF THE ISSUE:

Channels and/or parameters can be corrupted at runtime under the specified preconditions. The signals recorded for these channels/parameters in the TPTBIN file are corrupted afterwards and the subsequent assessment will analyze the results based on these potentially corrupted data.

WORKAROUND:

Regenerate the testframe.c testdriver to ensure that the dimension of signals in TPT matches the dimension of signals in the SUT.

RESOLVED IN:

TPT11u3, TPT12u2