PAWS Studio
Release Notes

Version 1.42.0 May 3, 2018
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1 Paws Developer's Studio

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1.1 Critical Items

1.1.1 PAWS and WRTS sources are built with Visual Studio 2017(v141); No support for Windows XP

Starting with version 1.41.0 we have stopped our support of having Paws Developer’s Studio and RTS run on Windows XP.

1.2 Known Limitations

1.2.1 No known limitations addressed in this release

No limitations

1.3 Enhancements

1.3.1 Paws Studio is able to build CEM Drivers With Visual Studio 2015 and 2017 Compilers (TaskID 1848)

This version of Paws Studio is now allowing its CEM modules to be built with C/C++ compilers belonging to Microsoft Visual Studio 2015 and 2017:
1.4 Problem Reports
2 Run Time System

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2.1 Critical Items

2.1.1 PAWS and WRTS sources are built with Visual Studio 2017 (v141); No support for Windows XP
Starting with version 1.41.0 we have stopped our support of having Paws Developer’s Studio and RTS run on Windows XP.

2.2 Known Limitations

2.2.1 No known limitations addressed in this release
No limitations

2.3 Enhancements

2.3.1 RTS Resource Visual Studio Solution Upgrade (TaskID 1708)
This version of Paws Studio and RTS package includes a Visual Studio 2017 solution of the RTS Resources that can be translated into a different language. Its location is C:\usr\tyx\Resources\WrtsRsrc\WrtsRsrc.sln. This solution builds WrtsResources.rsfc which can be loaded in RTS through Control | Options | Resources menus:
This solution demonstrates the possibility of translating RTS menus into a different language:
In order to be machine independent (when the foreign language translated solution is developed and built), the Code Page of all solution included .rc and .rc2 source files is 1200 (Unicode UTF-16 with BOM).

2.3.2 RTS is Able to Enforce UTF8 Encoding

RTS allows the operator to enforce UTF8 encoding regardless of the machine Current Language for the Non-Unicode Programs:
The location of this setting is present RTS | Control | Options:
In the pictures above, the Traditional Hong Kong Chinese Code Page is 950.
When the Default CP in the General Tab is 65001 (there is no system locale for non-unicode programs set up), this checkbox setting does not matter. However, it matters if RTS runs its Paws projects on machines with specific system locales for non-unicode programs.

*It is very important to restart both Paws Studio and RTS applications after this setting is notified.*
2.4 Problem Reports

2.4.1 Monitor Bus Feature Fails on SENSE Statement in 716.89 and Newer Atlas Subsets (Bug ID 1710)

This is the simplest test case that still exhibits the issue:

```
000000 Begin, Atlas program 'Bus Monitor Issue' $
000010 DECLARE, VARIABLE, 'ID-READ16' IS STRING (16) OF BIT $
000030 DECLARE, VARIABLE, 'OHM' IS DECIMAL $
000045 DEFINE, 'ITA-Signature', DIGITAL CONFIGURATION $
000050 DEFINE, 'ITAID_OUTPUT', DIGITAL SENSOR, (VALUE), LOGIC DATA,
  VOLTAGE-ONE 3.5V,
  VOLTAGE-ZERO 1.0V,
  CNX HI 3A2-A1-J6-A16 $
000055 END, 'ITA-Signature' $
E100000 ENABLE, DIGITAL CONFIGURATION 'ITA-Signature' $
200000 SENSE, (VALUE INTO 'ID-READ16'), ON 'ITAID_OUTPUT' $
C 300000 PROVE, (VALUE INTO 'ID-READ16'), ON 'ITAID_OUTPUT' $
400000 DISABLE, DIGITAL CONFIGURATION 'ITA-Signature' $
500000 OUTPUT, C' After SENSE or PROVE' $
600000 VERIFY, (RES INTO 'OHM'), IMPEDANCE, GT(14) OHM, RES MAX 1000 OHM,
  CNX HI 3A1 LO 3A2 source-hi 3A2-A2 source-lo 3A2-A2 $
700000 OUTPUT, C' After VERIFY' $
800000 MEASURE, (RES INTO 'OHM'), IMPEDANCE, RES MAX 1000 OHM,
  CNX HI J3 LO K3 source-hi J4 source-lo K4 $
900000 OUTPUT, C' After MEASURE' $
999999 TERMINATE, ATLAS PROGRAM 'Bus Monitor Issue' $
```

When RTS Monitor Bus feature is on, the RTS is expected to run the code between the INX and DCV Atlas Intermediate Language (AIL) instructions in a loop, until the user clicks Manual Intervention.

The loop is set up properly for PROVE, VERIFY and MEASURE Atlas verbs. All three have distinctive INX and DCV AIL instructions, and the RTS identifies and runs correctly their monitor bus loops. This is the interlace listing for these three atlas verbs:

```
300000 PROVE, (VALUE INTO 'ID-READ16'), ON 'ITAID_OUTPUT' $
  L06432: STM 300000 PRV S1 'BusMonitorIssue.ITA-Signature' WRN
  L06504: DEV S1 'BusMonitorIssue.ITA-Signature'
  L06513: =E= FNC DCF VALU
  L06603: DEV S2 'BusMonitorIssue.ITAID_OUTPUT' -> (S1 'BusMonitorIssue.ITA-Signature')
  L06612: =E= =X= FDD VALU
  L06522: NOP
  L06632: INX VALU
  L06457: NOP
  L06466: DEV S1 'BusMonitorIssue.ITA-Signature'
  L06475: INX
  L06623: DEV S2 'BusMonitorIssue.ITAID_OUTPUT' -> (S1 'BusMonitorIssue.ITA-Signature')
  L06531: FTB VALU I0160464
  L06540: UNL D2(0):0160430 I01144
  L06547: DEV S1 'BusMonitorIssue.ITA-Signature'
  L06556: DLD LT UL = I01144
```
600000 VERIFY, (RES INTO 'OHM'), IMPEDANCE, GT(14) OHM, RES MAX 1000 OHM, CNX HI LO source-hi source-lo $
$
800000 MEASURE, (RES INTO 'OHM'), IMPEDANCE, RES MAX 1000 OHM, CNX HI LO source-hi source-lo $

However, the SENSE instruction misses the DCV AIL instruction:

200000 SENSE, (VALUE INTO 'ID-READ16') , ON 'ITAID_OUTPUT' $
As a result of this situation, the RTS set up the monitor bus loop starting with the INX of SENSE and ending with the next DCV which happened to belong to the following executed VERIFY. This is why the Monitor Bus was incorrectly running all ATLAS code in between these statements.

The replacement of SENSE with PROVE solves this issue because PROVE provides a local DCV AIL instruction. However, this cannot be considered a permanent solution.

The code correction implemented in this RTS release consists in having the UNL AIL instruction belonging to SENSE supply the role of missing DCV when the Bus Monitor feature is on.
3  Paws Compilers All Subsets

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3.1  Critical Items

3.1.1  No critical items addressed in this release
No critical items

3.2  Known Limitations

3.2.1  No known limitations addressed in this release
No known limitations

3.3  Enhancements

3.3.1  No enhancements addressed in this release
No enhancements

3.4  Problem Reports

3.4.1  No problem reports addressed in this release
No problem reports
4  Paws Compilers CASS Subset

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4.1  Critical Items

4.1.1  No critical items addressed in this release

No critical items

4.2  Known Limitations

4.2.1  No known limitations addressed in this release

No known limitations

4.3  Enhancements

4.3.1  No enhancements addressed in this release

No enhancements

4.4  Problem Reports

4.4.1  No problem reports addressed in this release

No problem reports