TYX CORPORATION

Productivity Enhancement Systems

PAWS Studio
Release Notes

Version 1.36.1
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Version 1.36.1
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Version 1.36.1
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2.1   Critical Items

2.2   Known Limitations

2.3   Enhancements

2.3.1   Reporting Connection Info for Digital ATLAS
How it used to work:

If the user does not use the **–u** compiler option, nothing will change from the way it used to work:
   a)   The channel information would be the only one available in the CEM driver.
   b)   No switch information would be available.
   c)   There would still be 2 ways of describing the channel information using the mate description and the triplet description (used for analog devices).
   - For the Mate description, the values passed to the CEM driver would be the switch value to which you need to add 100 times the plug value.
        This is a sample of a Mate description of the digital channel information:

```
begin TRM920;
 begin dwg 94 : J2=0;
   DTI_1-HI to 1:16  via switch   1:16; \\ DTI Chans   0 thru  15
   DTI_1-HI to 17:32 via switch  17:32; \\ DTI Chans  16 thru  31
   DTI_1-HI to 33:48 via switch  33:48; \\ DTI Chans  32 thru  47
   DTI_1-HI to 49:64 via switch  49:64; \\ DTI Chans  48 thru  63
 end;
end;
```

The DTI_1-HI device port is also described in the device database.
In this case, the values that would be passed on to the CEM driver would simply be the switch values (from 1 to 64) as the plug value has been set to 0 (so adding zero 'time' 100 is not adding anything).
   - For the triplet description, the path information (PTH) would the one passed on and the module and block values would be simply ignored.
        This is a sample of a classic block/module/path description of the digital channel information:

```
begin BLK = 1;
 begin MOD = 5  500 : P1;
   DTI_1-HI to 1:16  via switch   1:16 PTH =  1:16; \\ DTI Chans   0 thru  15
   DTI_1-HI to 17:32 via switch  17:32 PTH = 17:32; \\ DTI Chans  16 thru  31
   DTI_1-HI to 33:48 via switch  33:48 PTH = 33:48; \\ DTI Chans  32 thru  47
   DTI_1-HI to 49:64 via switch  49:64 PTH = 49:64; \\ DTI Chans  48 thru  63
   DTI_1-LO to 94; \\ DTI Gnd
 end;
end;
```

The DTI_1-HI device port is also described in the device database.

The reason there is an offset in the PTH values is because the PTH cannot start at 0 even if the channel number does. The highlighted value is what would be passed on to the CEM driver.

How it works now – Step 1:

The first thing that the user needs to do is to use the ATLAS **–u** compiler option:
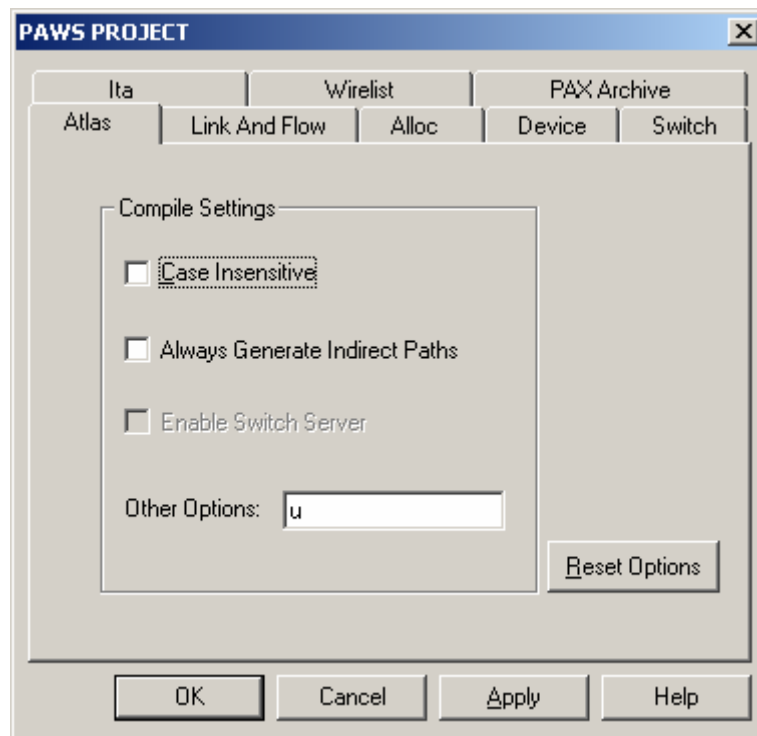
This means that nothing will need to be done in the WRTS settings. Old projects will work the way they used to and new project will work the way they have to without having to switch WRTS options back and forth.

How it works now – Step 2:

    I.   The channel information will have to use the Mate description.
   II.   The switch information will use the classic block/module/path description. This is consistent with the way the triplets are used for switches with the analog ATLAS.
 III.   The channel pins will have to connect to the switch pins.

     Here is an example of some channels pins plugging into the switch pins using both switch descriptions
     (Mate for channel values and classic for switch values):

```
begin TRM920;
 begin dwg 94 : J2=0;
   DTI_1-HI to 1:16  via switch   1:16; \\ DTI Chans   0 thru  15
   DTI_1-HI to 17:32 via switch  17:32; \\ DTI Chans  16 thru  31
   DTI_1-HI to 33:48 via switch  33:48; \\ DTI Chans  32 thru  47
   DTI_1-HI to 49:64 via switch  49:64; \\ DTI Chans  48 thru  63
 end;
end;

begin BLK = 2;
 begin MOD = 5  500 : P1;
   J2 1:16  to 1:16 via switch   1:16 PTH =  51:66; \\ DTI Chans   0  thru  15
   J2 17:32 to 17:32 via switch 17:32 PTH =  67:82; \\ DTI Chans  16 thru  31
```

```
      J2 33:48 to 33:48 via switch 33:48 PTH =  83:98; \\ DTI Chans   32 thru  48
      J2 49:64 to 49:64 via switch 49:64 PTH =  99:114; \\ DTI Chans   49 thru  64
      DTI_1-LO to 94; \\ DTI Gnd
   end;
  end;
```

The DTI_1-HI device port is also described in the device database.

The values chosen for the plug, the switch (in the first part) and the triplets (block, module and path in the second part) are user defined and a function of what the user wants to see in his CEM driver code.

As far as connecting the two parts, it is clear from this example that the channel pins are connected to the switch pins.

In the end, the exiting switch pins will have to be referred to in the ITA database as it is the case for pins associated to switches used for the analog ATLAS.

As an example, pin **J2-1** associated to **switch 1** in the channel information will also be connected in the switch description to **P1-1** via switch 1 (BLK=2, MOD = 5, PTH =51).

How it works now – Step 3:

What's new?

The channel information:

In this case, the channel information will be delivered to the CEM in exactly in the same fashion and format as it was before when using the Mate description for the channels. So, there is nothing new here. The user can refer to the existing documentation to know how to extract and use the channel information in the user C/C++ code.

The switch information:

The switch information is going to be new.

New function calls will be made to the CEM interface:

   I.   A **CON** associated to enabling the digital configuration.
   II. A **DIS** associated to the disabling of the digital configuration.

   Both **CON** and **DIS** will be associated with triplet values exactly the way it is for analog ATLAS.

   You will only need to map the **CONNECT** and **DISCONNECT** action in the CEM wizard to the appropriate C++ function which is used to process triplets. For more information on this, please refer to the existing documentation.

   All the switch that are going to be connected and disconnected with the user's code will be the ones associated to the channels defined in the digital configuration. While the digital configuration is enabled, the user will be able to **STIMULATE**, **SENSE** and **PROVE** all necessary channels within that configuration until the digital configuration will the disabled in the ATLAS.

   You may or may not have to change the content of those C++ function as a function of how you have chosen the values for the block, module or path (the triplets).

2.4   Problem Reports

2.4.1   PR08004
This has been fixed with the enhancement "Reporting Connection Info for Digital ATLAS"

2.4.2   PR 08037
The problem was reported for the ESTS subset. It occurred due to an ErrMsg() reported in the CEM call from within a __StationInit() procedure of ATLAS. The error handling of the CEM error message caused the WRTS to invoke Reset() which further called the __StationInit() [Trap 35] procedure, leading to an infinite loop. Resolution to ignore re-invoking [Trap 35] if it is already in being executed, has been implemented as a fix for this PR in this Release.