

# **Intrepid Control Systems, Inc.**

**VSPY for CANoe<sup>[TM]</sup> Users**

**Document Number: G-ICSI-1006**

**Rev 2.0 07/2014**

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## 1. Introduction:

CAPL Conversion feature in VSPY facilitates the conversion of a CANoe configuration to VSPY Configuration. Once this conversion is complete, VSPY can be used for the development of the configuration based on the requirements.

This document explains the CANoe similar features in VSPY which can be used for the development.

## 2. VSPY for CANoe<sup>TM</sup> Users

### 2.1 Messages:

Go to ‘Spy Networks’ → ‘Messages’ to view bus traffic (Similar to Trace).

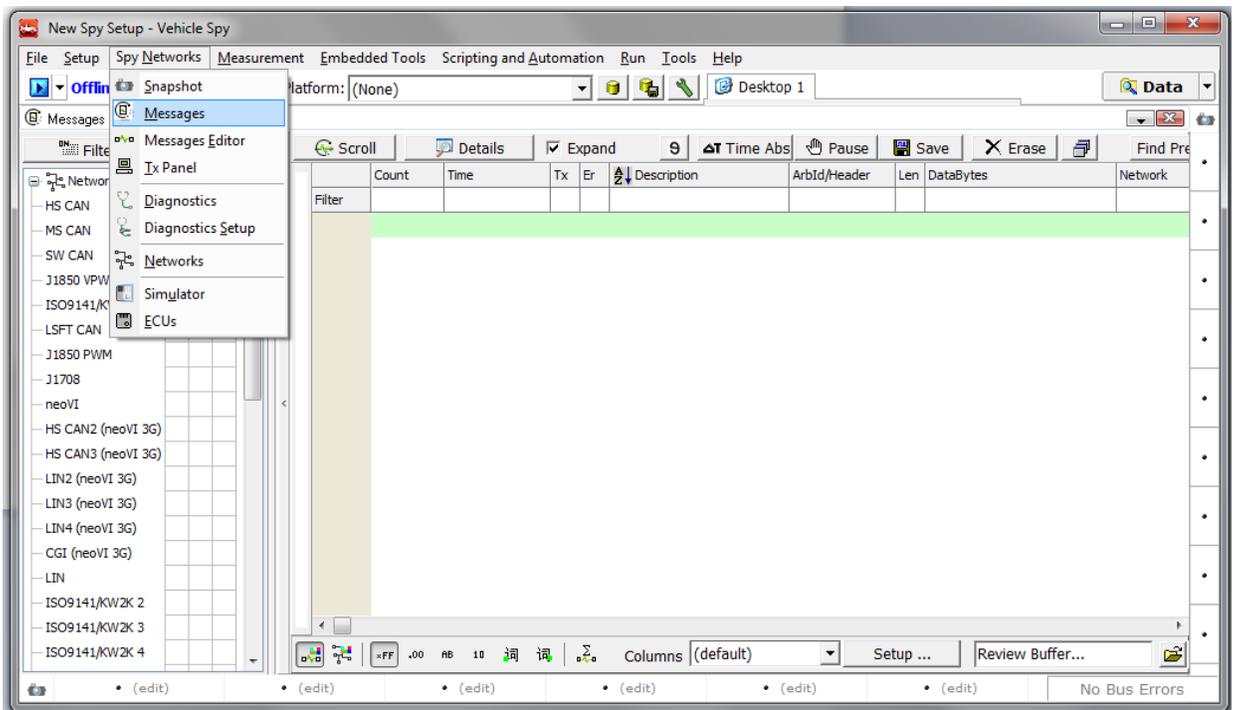
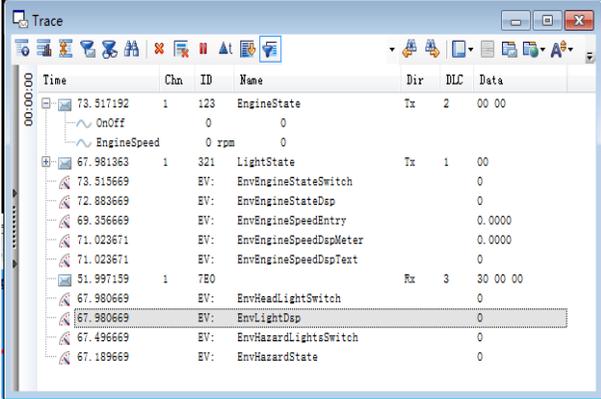
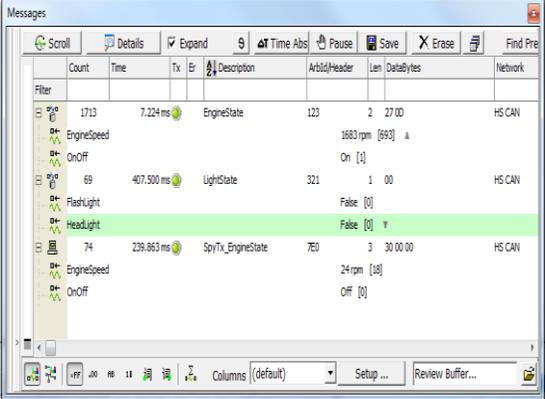


Figure 1: ‘Messages’ View in VSPY is similar to the ‘Trace’ window in CANoe

CANoe	VSPY
	
“View”→”Trace”	“Spy Networks” → ”Messages”

**Tips:****Commonly used buttons:**

- “**Filter**” – In each column header you can filter messages you care about.
- “**Scroll**” – View messages in scrolling mode.
- “**Details**” – View details of selected message (Green background).
- “**Time Abs**” – Change message timestamp mode.
- “**Save**” – Save bus traffic for later replay or analysis.

Detailed info on Messages view @ [Messages](#)

## 2.2 Signals

Go to ‘**Measurement**’ → ‘**Signal Plot**’ to open a signal view window (Similar to Graphic)

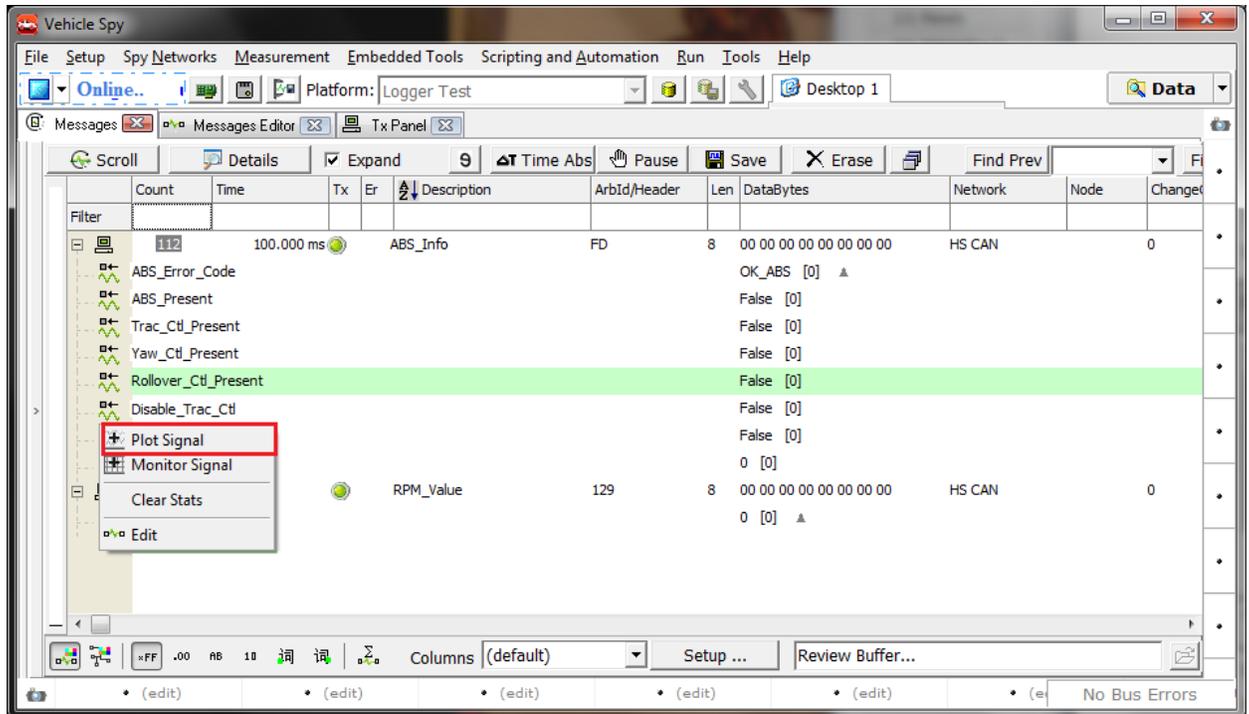
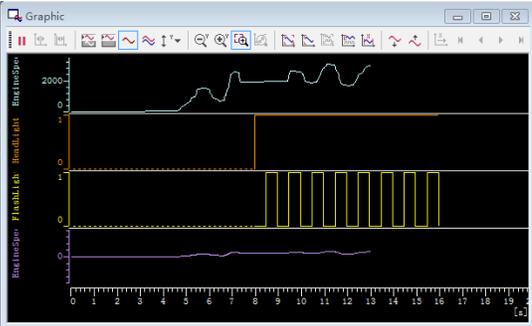
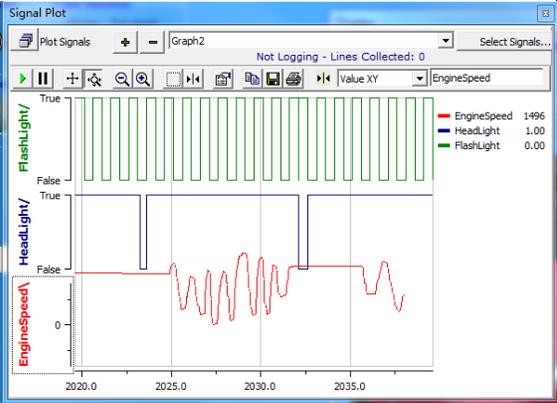


Figure 2: ‘Signal Plot’ View in VSPY is similar to the ‘Graphic’ window in CANoe

You can also right click on the icon before any signal of the message, click ‘**Plot Signal**’ to plot the signal in chart mode or ‘**Monitor Signal**’ to monitor it in text mode.

Detailed info on Signals and Signal Plot view @ [Signals](#) and [Signal Plot](#)

CANoe	VSPY
	
“View” → ”Graphic”	“Measurement” → ”Signal Plot”

Click ‘**Select Signals...**’ button to open a new window to choose what signals you want, including signals within messages, application signals etc.

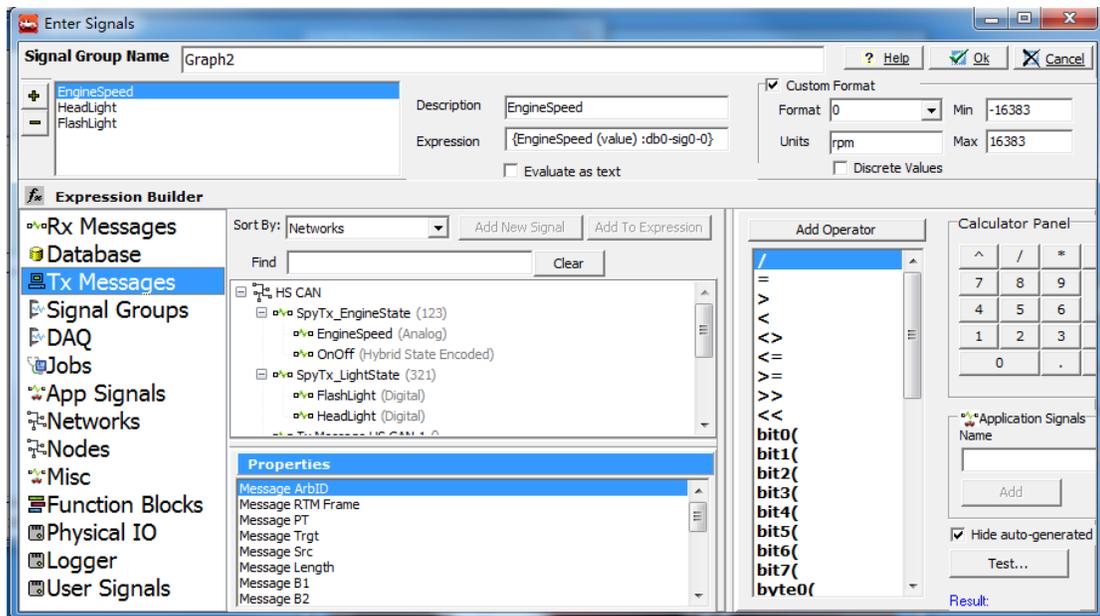
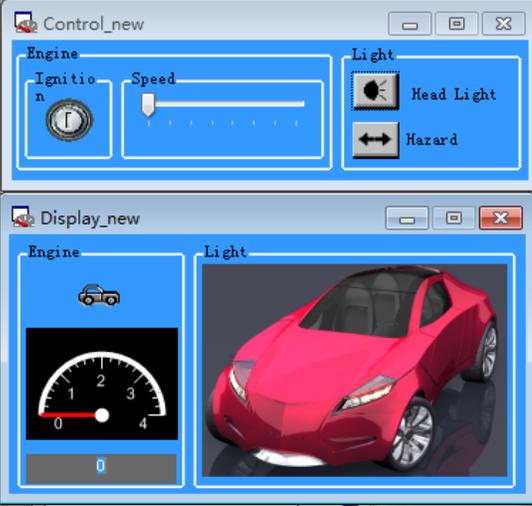
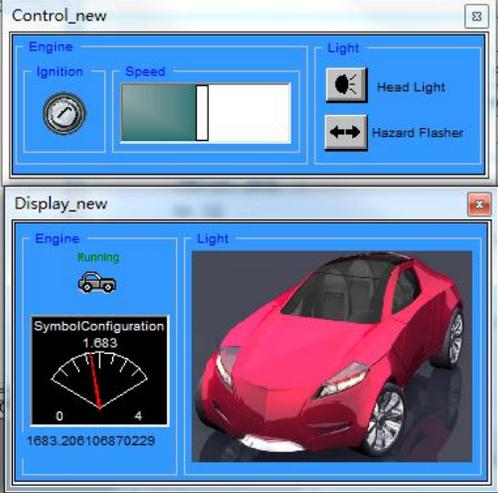


Figure 3: View in VSPY to add more signals to the plot

You can also change signals' values within the message.

## 2.3 Panels

Go to ‘**Measurement**’ → ‘**Floating Panels**’ to open multiple panels at the same time.  
Click ‘**More**’ to see rest of the panels in the project.

CANoe	VSPY
	
“View” → ”Panels”	“Measurement” → ”Floating Panels”

Go to ‘**Measurement**’ → ‘**Graphical Panels**’ to edit panels. All the panels will be ranked in alphabetical order at the bottom. Unlock the panel before making changes using the lock button, context menu or **Ctrl+E**.

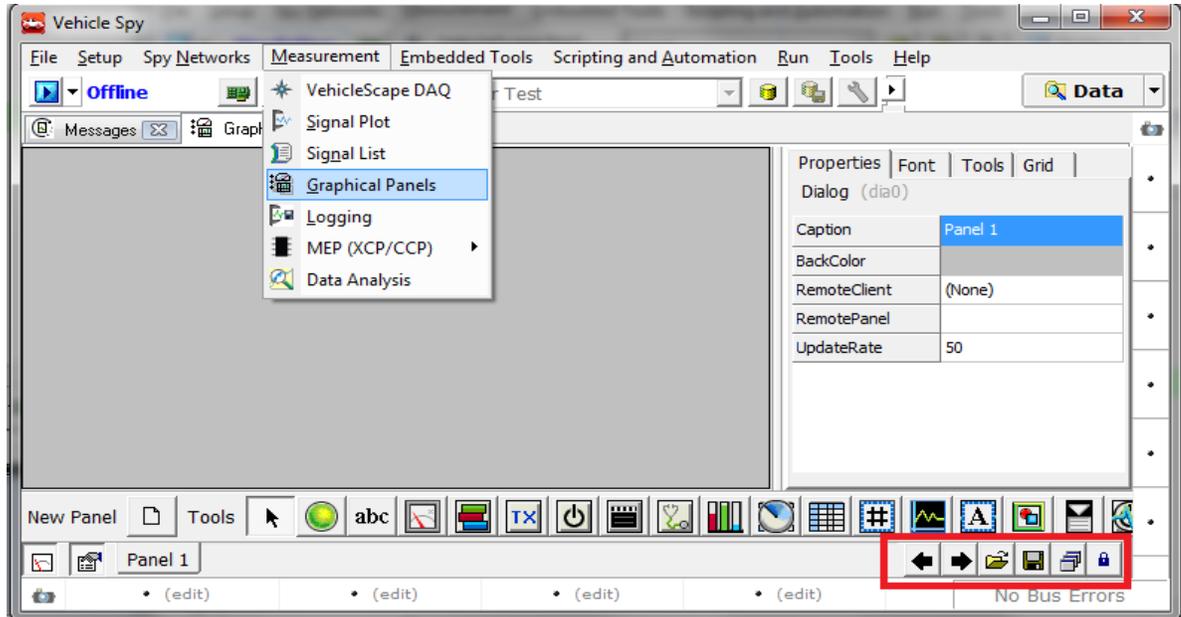


Figure 4: ‘Graphical Panels’ view in VSPY is similar to ‘Panel Editor’ in CANoe

CANoe	VSPY
<p>“File” → ”Panel Editor”</p>	<p>“Measurement” → ”Graphical Panels”</p>

Detailed info on Graphical Panels view @ [Graphical Panels](#)

## 2.4 Application Signals: (Environmental Variables - ENV)

Go to ‘Scripting and Automation’ → ‘Application signals’ to view the Environment Variables.

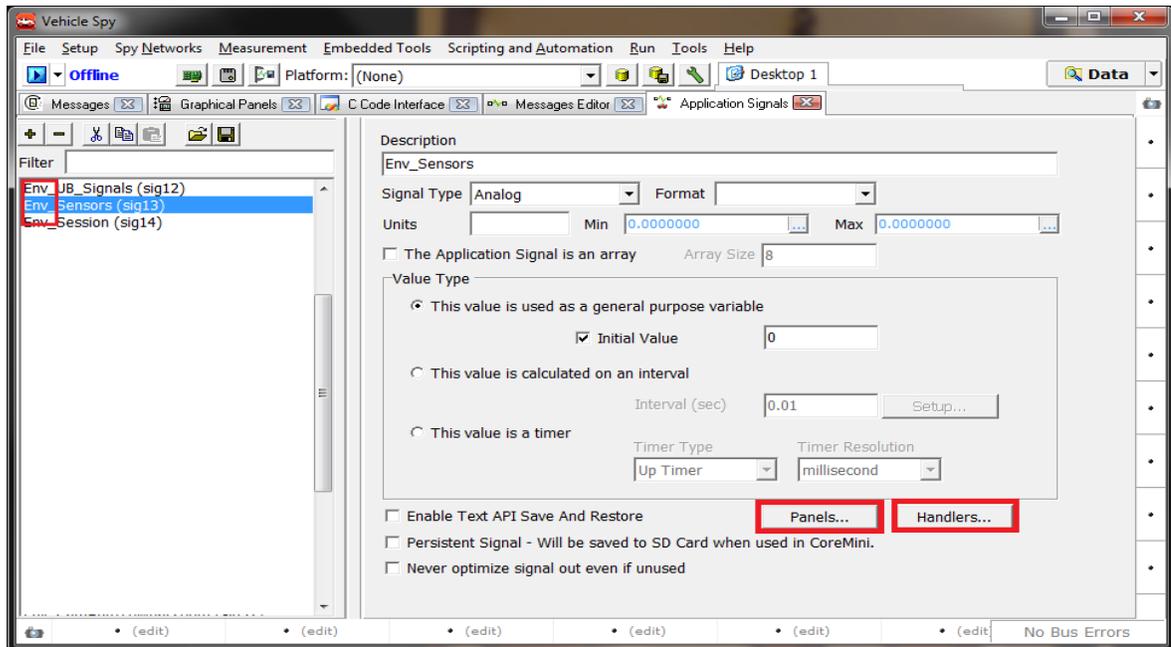


Figure 5: Application Signals in VSPY are similar to Environmental Variables in CANoe

### Tips:

After conversion, the environmental variables (ENV) will be listed with the prefix “ENV\_” in ‘Application Signals’

Panels:- This option will give all the panels this particular signal is present in.

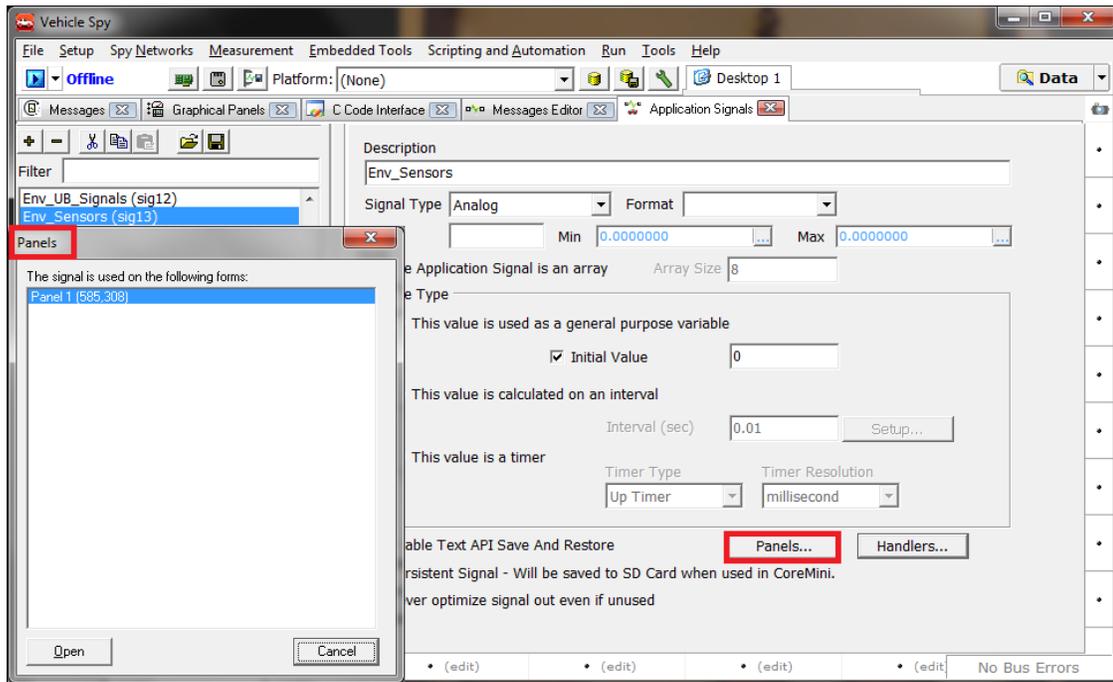


Figure 6: Panels option shows all the panels in which variable is present.

Handlers:- This option will show all Nodes / C Code projects this variable is handled by.

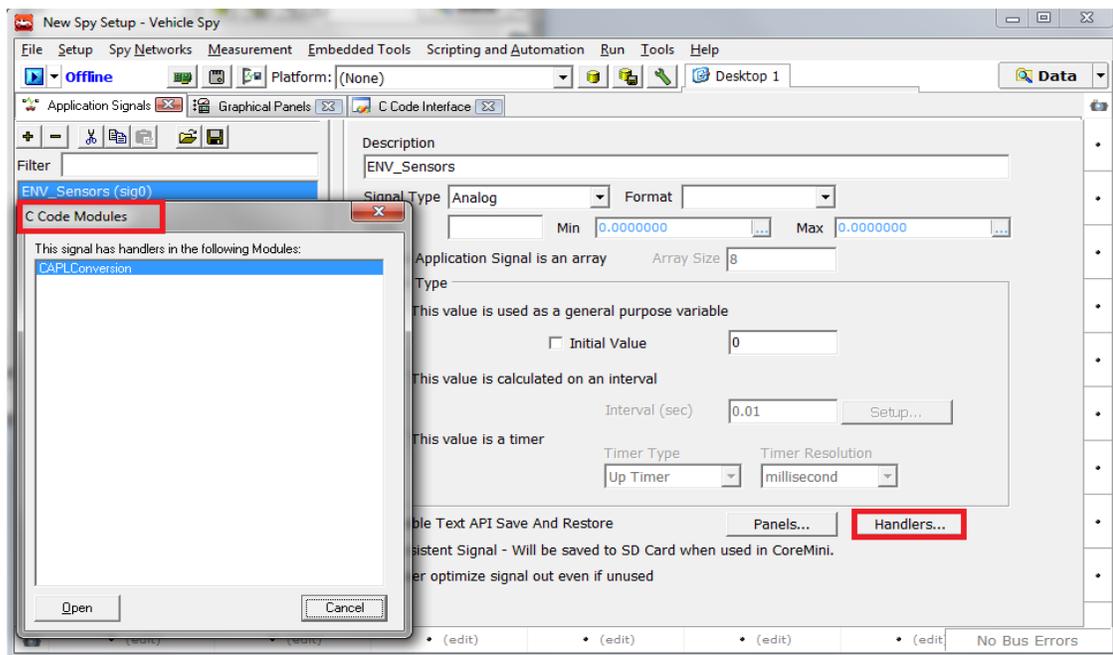


Figure 7: Handlers option shows all Nodes / C Code projects in which variable is present.

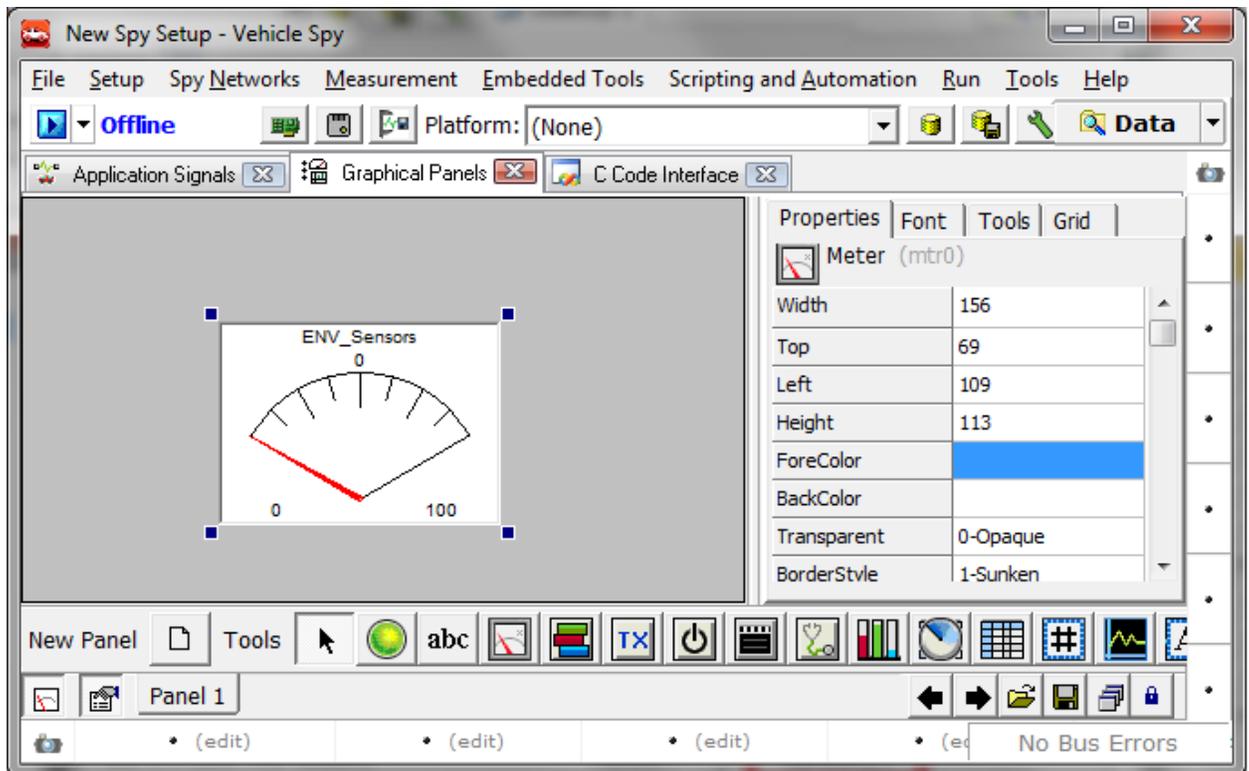


Figure 8: Panel with the Graphical tool with the ENV Application signal attached to it.

### Tips:

- To find the respective ENV Application signal in the Application Signals list,
- Follow the procedure in above point (2.3) to make the panel editable.
- Highlight the respective tool from the Panel.
- Press '**CTRL + G**' to get the respective Application Signal.

## 2.5 Transmit Panel: (Interactive Generator - IG)

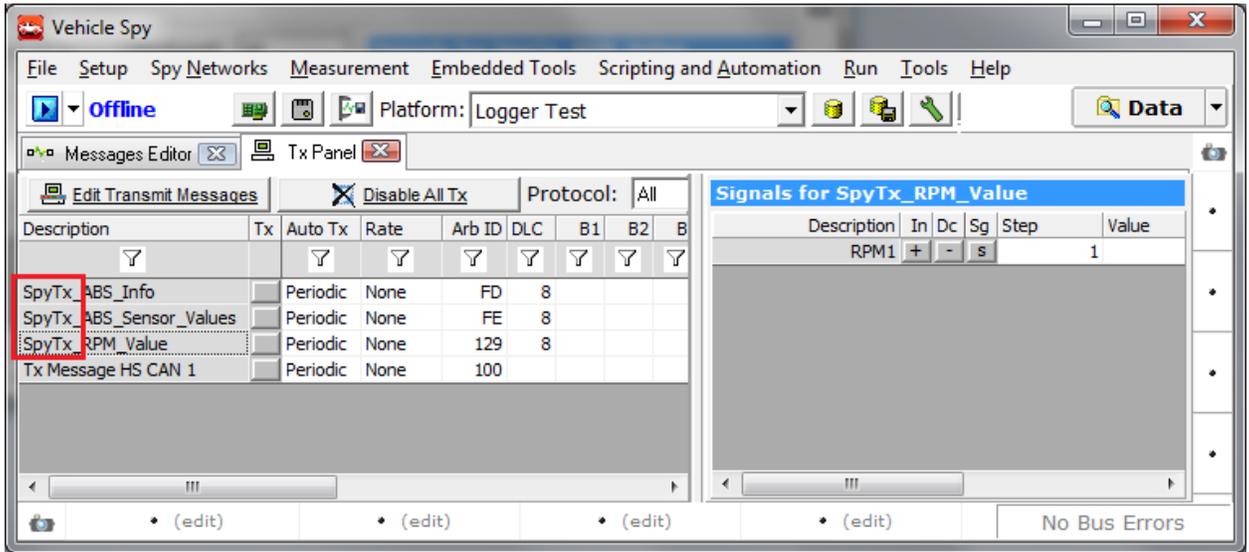


Figure 9: 'Tx Panel' view in VSPY is similar to 'IG' in CANoe

CANoe	VSPY
<p>“View” → ”IG”</p>	<p>“Spy Networks” → ”Tx Panel”</p>

**Tips:**

After conversion, messages from Interactive Generators (IG) block will be listed with the prefix “SpyTx\_” in Tx Panel, from where you can transmit these messages in Periodic mode or one time mode.

You can also change signals’ values within the message.

Detailed info on Transmit Panel view @ [Tx Panel](#)

## 2.6 Message Editor: (CANdb++ Editor)

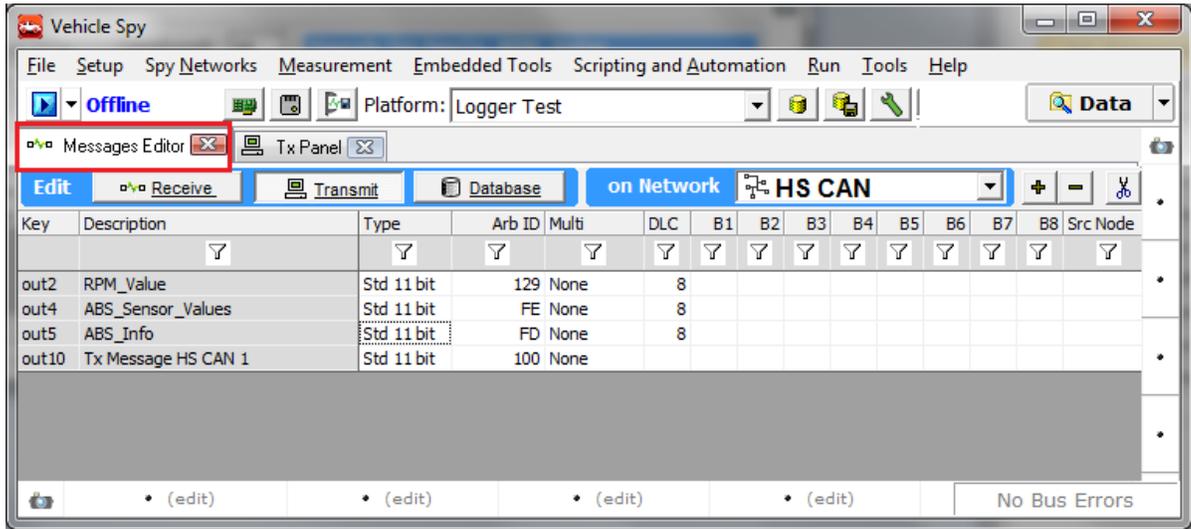


Figure 10: ‘Messages Editor’ view in VSPY is similar to ‘CANdb++Editor’ in CANoe

CANoe	VSPY
<p>“File” → ”Open CANdb++ Editor” or Double click on database file</p>	<p>“Spy Networks” → ”Messages Editor”</p>

### Tips:

- “**Receive**” window means messages defined here are expected received from bus.
- “**Transmit**” window means messages defined here are going to be sent out.
- “**Database**” window mean messages listed here are from database (DBC etc.).

Detailed info on Messages Editor @ [Messages Editor](#)

## 2.7 C Code Interface (CCIF): (Simulation)

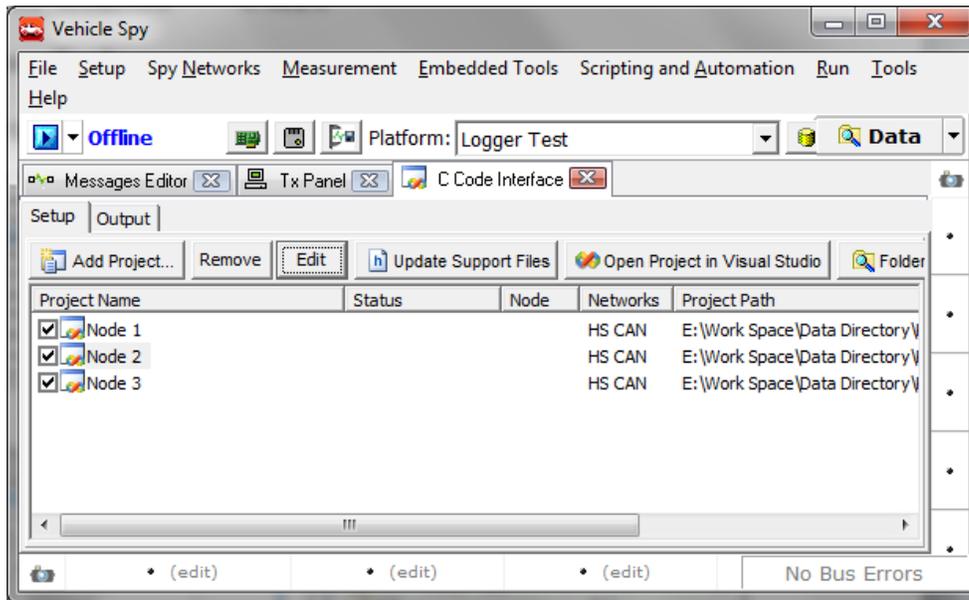


Figure 11: ‘C Code interface CCIF’ view in VSPY is similar to ‘Simulation’ in CANoe

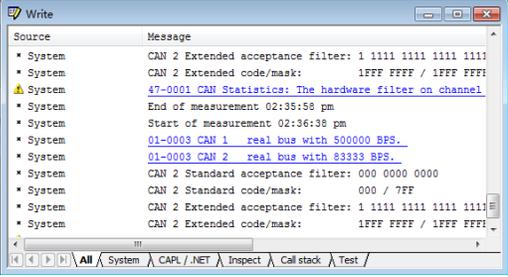
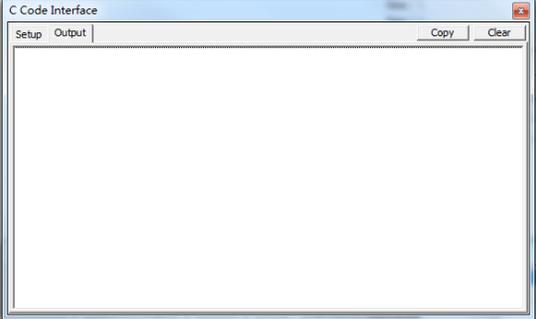
CANoe	VSPY
“View” → ”Simulation Setup” → Left	“Scripting and Automation” → ”C Code Interface” → ”Setup”

### Tips:

Each node from CANoe will be converted into one project in VSPY. Open each node project with Visual Studio, you can edit the code according to your requirement like in CAPL Browser.

Detailed info for C Code interface @ [CCIF](#) and [Working with CCIF](#)

## 2.8 Output (CCIF): (Write in CANoe)

CANoe	VSPY
	
<p>“View” → ”Write”</p>	<p>“Scripting and Automation” → ”C Code Interface” → ”Output”</p>

### Tips:

Write area for function ‘write’ called in CAPL will be converted Output area in VSPY.

## 2.9 Network Databases: (Databases)

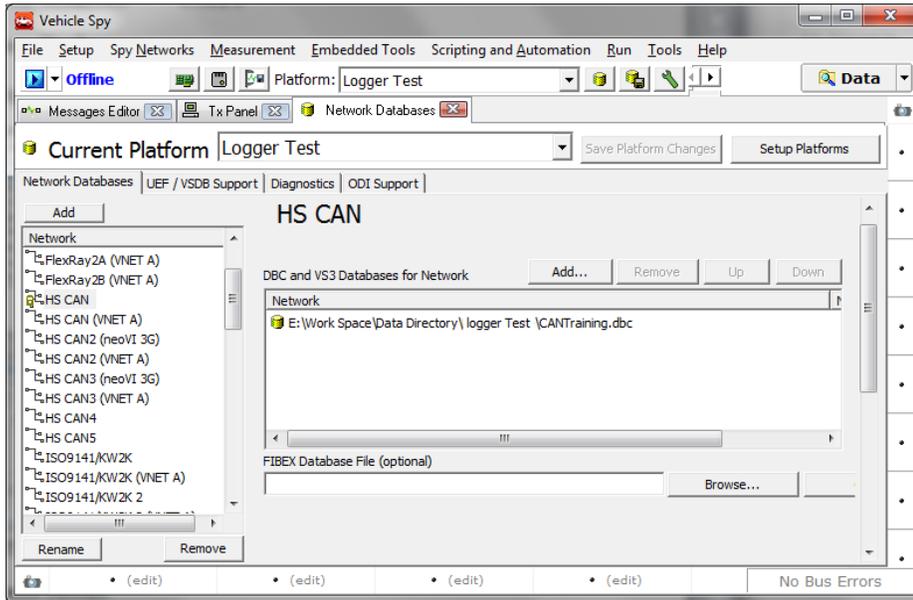


Figure 12: ‘Network Databases’ view in VSPY is similar to ‘Databases’ in CANoe

CANoe	VSPY
<p>“View” → ”Simulation Setup” → Right</p>	<p>“Setup” → ”Network Databases”</p>

### Tips:

Select the required bus from the left column, Click “**Add...**” button on right side to add a database file to selected bus.

Details about Network Database @ [Network Database](#)

## 2.10 Bus Statistics

Go to ‘Spy Networks’ → ’Networks’, Click the ‘Statistics’ button at the top to open a view for bus statistics information.

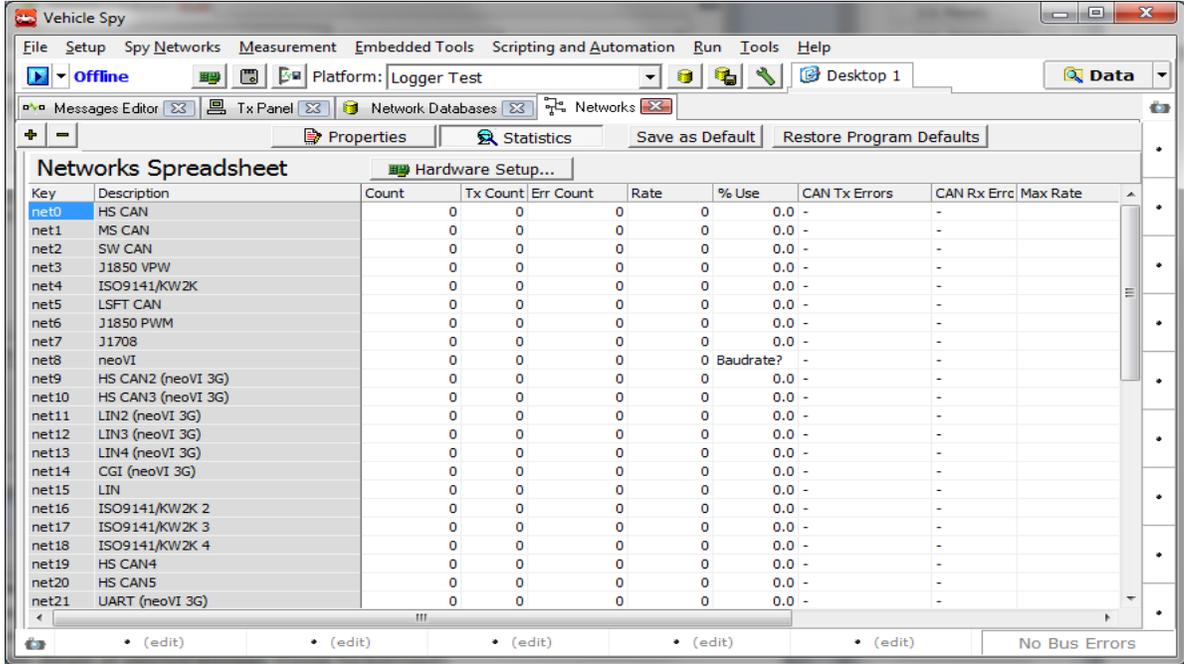


Figure 13: ‘Statistics’ view in VSPY is similar to ‘Can Statistics’ in CANoe

CANoe	VSPY
<p>“View” → ”CAN Statistics”</p>	<p>“Spy Networks” → ”Networks” → “Statistics”</p>

Details about Network Statics @ [Network Statistics](#)

## 2.11 Hardware Setup

Go to ‘**Setup**’ → ‘**Hardware**’ to open the hardware setup window.

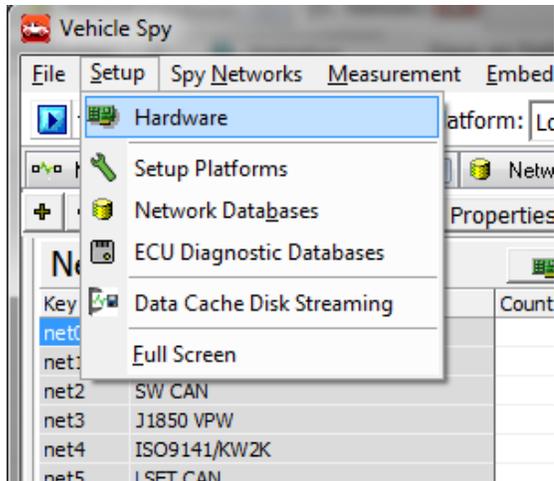


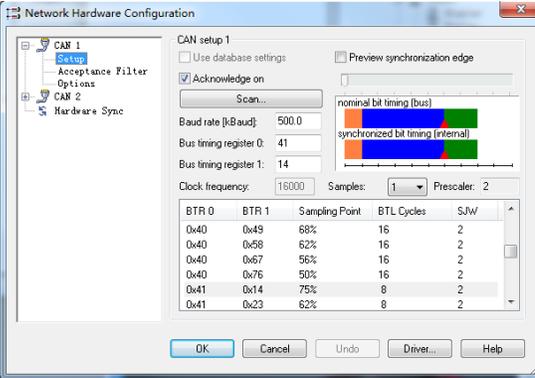
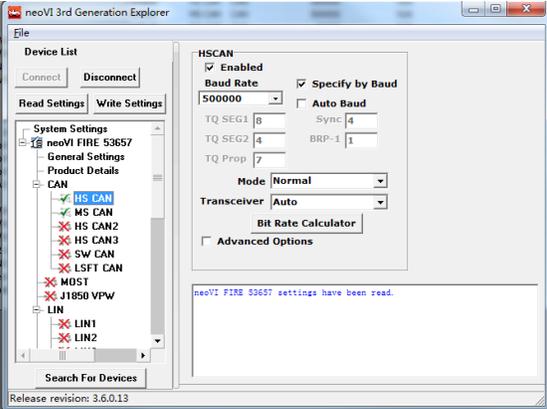
Figure 14 a: Setup Hardware to configure hardware

 A screenshot of the Hardware Setup window. It features a 'Networks Spreadsheet' table with columns for Description, Hardware, Network, Protocol, Baud Rate, Color, Hardware Rate, Bus State, and Database Net. The table contains four rows of network configurations.
 

Description	Hardware	Network	Protocol	Baud Rate	Color	Hardware Rate	Bus State	Database Net
HS CAN	Default	HS CAN	CAN	500000		N/A		(Default)
MS CAN	Default	MS CAN	CAN	500000		N/A		(Default)
SW CAN	Default	SW CAN	CAN	33333		N/A		(Default)
11850 VPW	Default	11850 VP	11850 VPW	10417		N/A		(Default)

Figure 14 b: Setup Hardware to configure hardware

- Click ‘**Hardware Setup**’ button to open the ‘**neoVI 3<sup>rd</sup> Generation Explorer**’ window.
- Click ‘**Connect**’ button to connect to the hardware after which you can enable your hardware’s bus channel, setup the baudrate, etc. After you setup, **DO NOT** forget to click the ‘**Write Settings**’ button to save the changes before you ‘**Disconnect**’ the hardware.

CANoe	VSPY
	
<p>Right click on “Network” → ”Network Hardware...”</p>	<p>“Setup” → ”Hardware” → ”Hardware Setup...”</p>

### Tips:

- ‘**Connect**’ the selected hardware before modification and ‘**Write Setting**’ to make it take effect.
  - “**Connect**” – Connect the hardware.
  - “**Read Setting**” – Read current settings in hardware.
  - “**Write Setting**” – After change config, need to write the settings.
  - “**Disconnect**” – Disconnect the hardware after finishing configuration.
- Check box ‘**Enable**’ to enable or disable each channel on the hardware.

### 3. More Tips in VSPY

#### 3.1 Start Running Modes:

Click the black inverted triangle to the left of “Offline” word, then choose:

- **“Run with Transmit”** – Run online and transmit/receive messages from the hardware.
- **“Run Monitor Only”** – Run online and only receive messages from the hardware.
- **“Stop”** – Stop Running
- **“Run Simulation”** – Browse the file you want to replay when running in simulation. To run in simulation mode without specifying a replay file, use “No Replay File”.

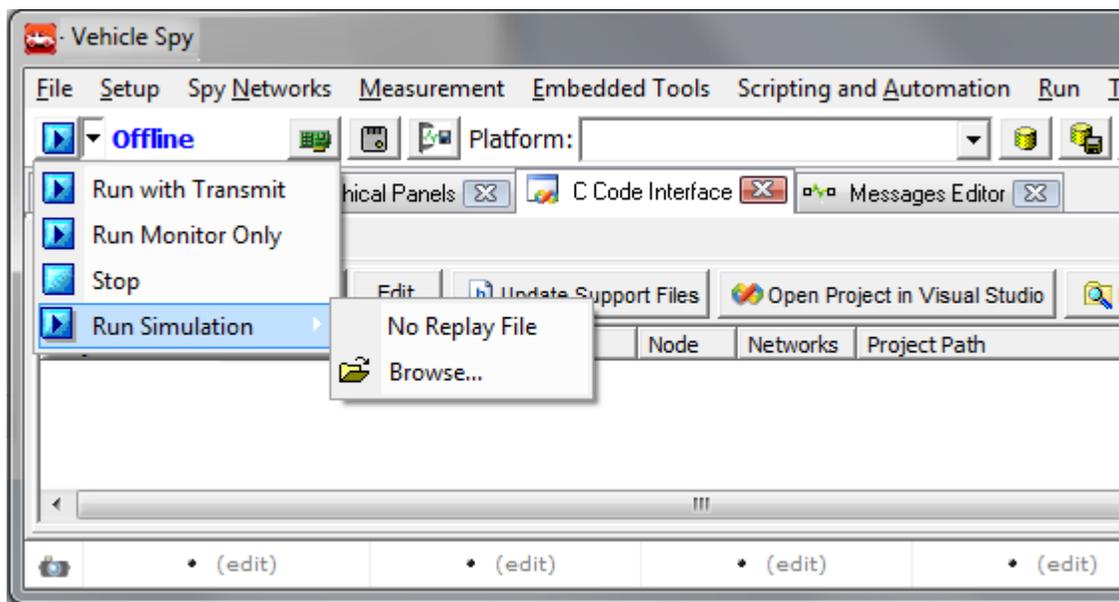


Figure 15: Running and stopping modes in VSPY

Details about Running Modes @ [Running and Stopping](#)

### 3.2 Projects Location

Go to “File” → ”Explore Data Directory”, or click the “Data” button in the upper right corner to view the converted projects in the data directory

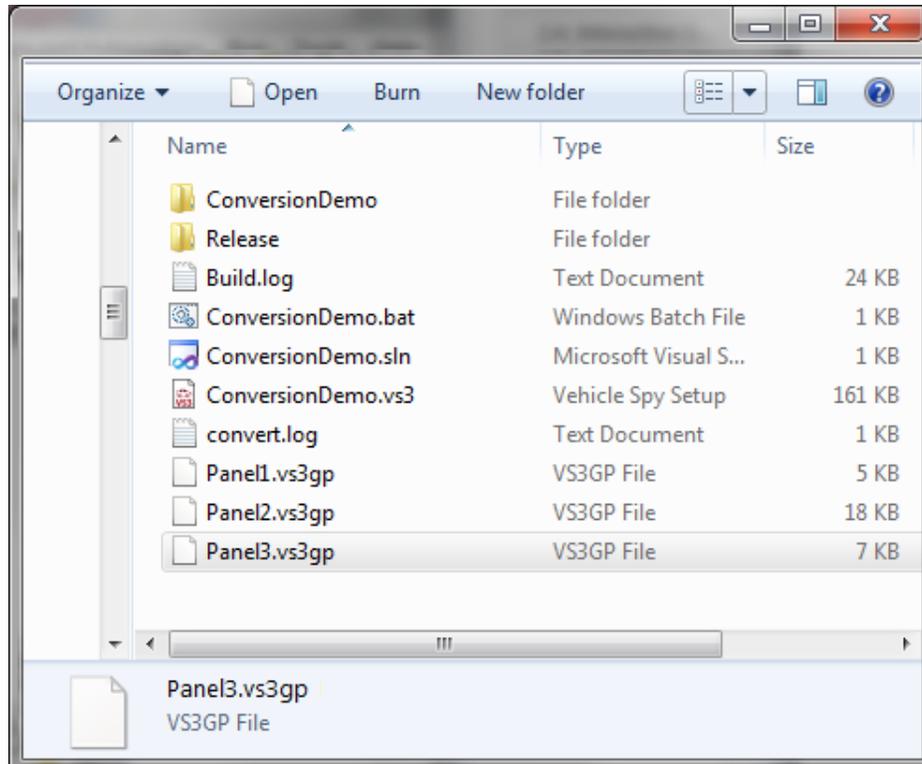


Figure 16: Running and stopping modes in VSPY

#### Tips:

- File types:
  - \*.vs3 – Main Vehicle Spy project file.
  - \*.vs3gp – Panel import file in case you wish to re-import a panel.
  - \*.log – Project conversion log file.
  - \*.bat – Build Visual Studio projects bat file.
  - \*.sln – Visual Studio solution project created for \*.cfg file from CANoe.

Besides, each node will be converted to one separated project of this solution with one folder, named with its node name

### 3.3 Node Setting in CCIF

In CCIF setup tab, click any one of the node project listed in the window, then click “**Edit**” button to open C Code Module Setup window, where there are 5 tabs for different usage

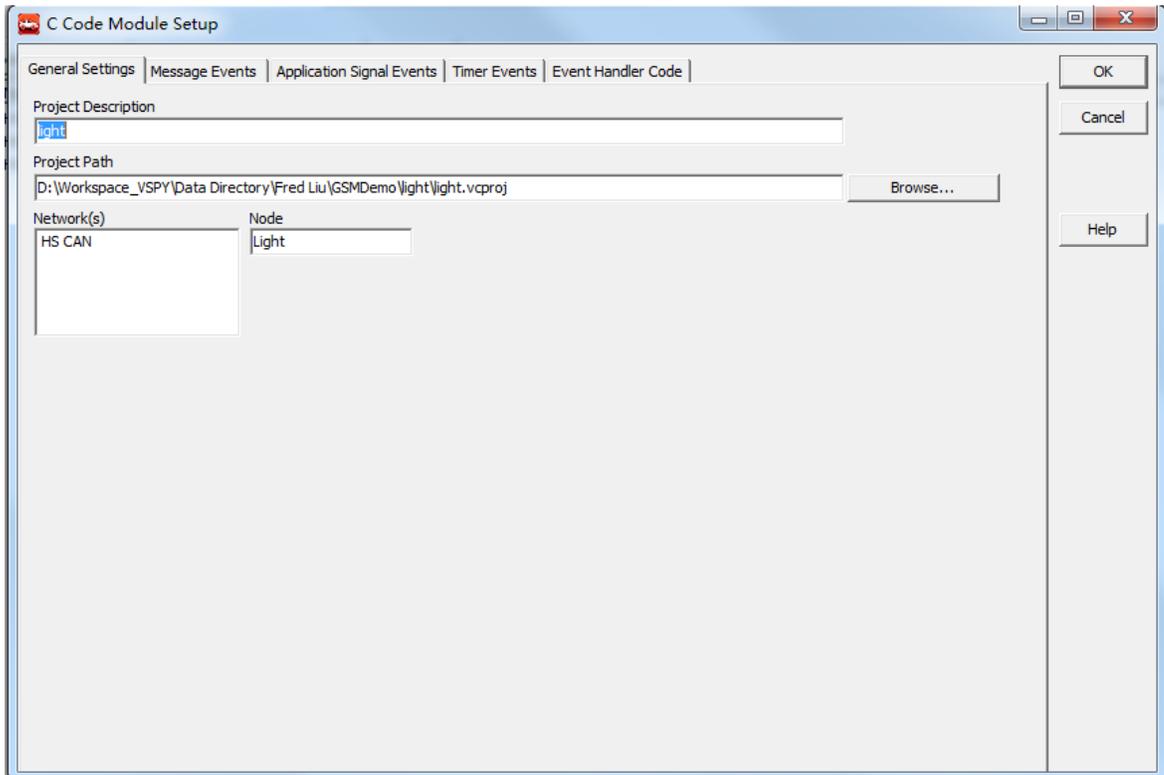


Figure 17: General Settings of a CCIF project in VSPY

“General Setting” is used to show more information about the node. You can “**Browse**” to relocate another Visual Studio project for the node

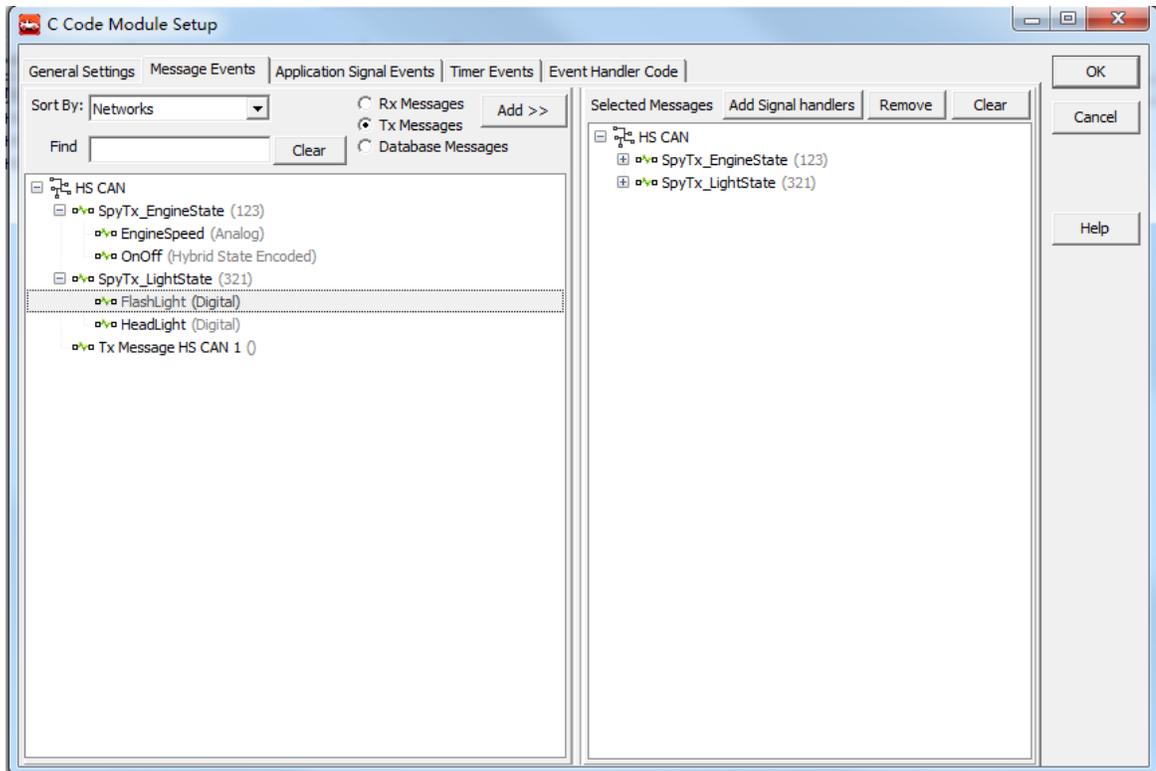


Figure 18: Settings to add Messages Events in a CCIF project

“Message Events” is used to add callbacks for any messages from Receive (Rx Message), Transmit (Tx Message) or Database (Database Messages). Click the message on the left part window and click “**Add >>**” to add the handler.

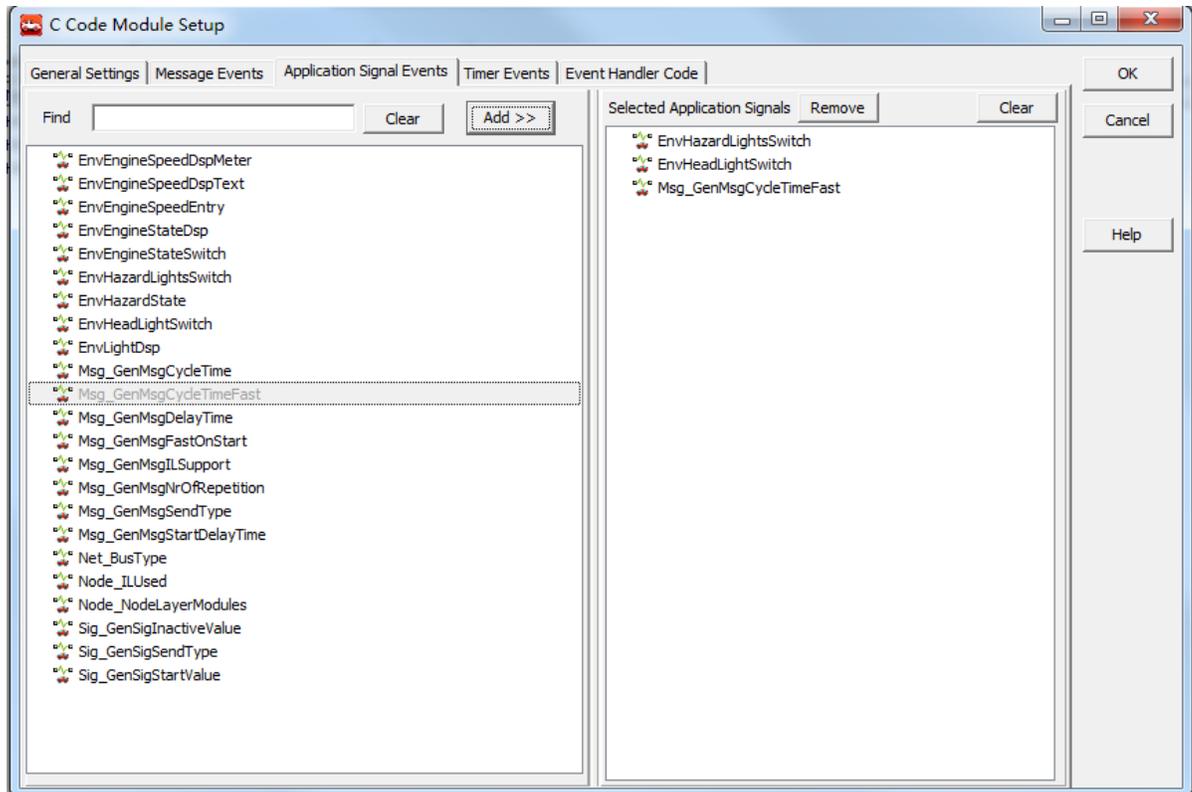


Figure 19: Settings to add Application Signals Events in a CCIF project

“Application Signal Events” is used to add callbacks for any signals from messages or global application signals. Click the signal on the left part window and click “**Add >>**” to add the handler.

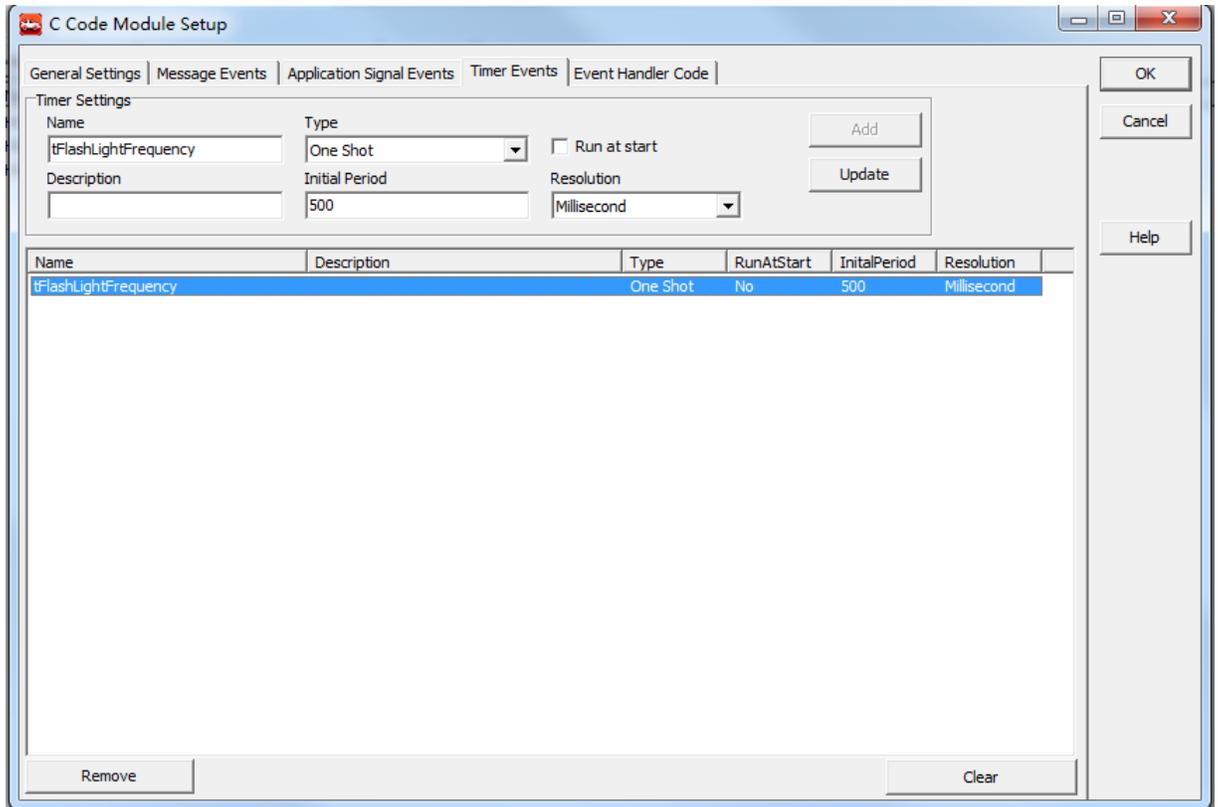


Figure 20: Settings to add Timer Events in a CCIF project

“Timer Events” is used to setup a timer event. Set the timer in ‘Timer Setting’ and click ‘Add’ button to add the handler

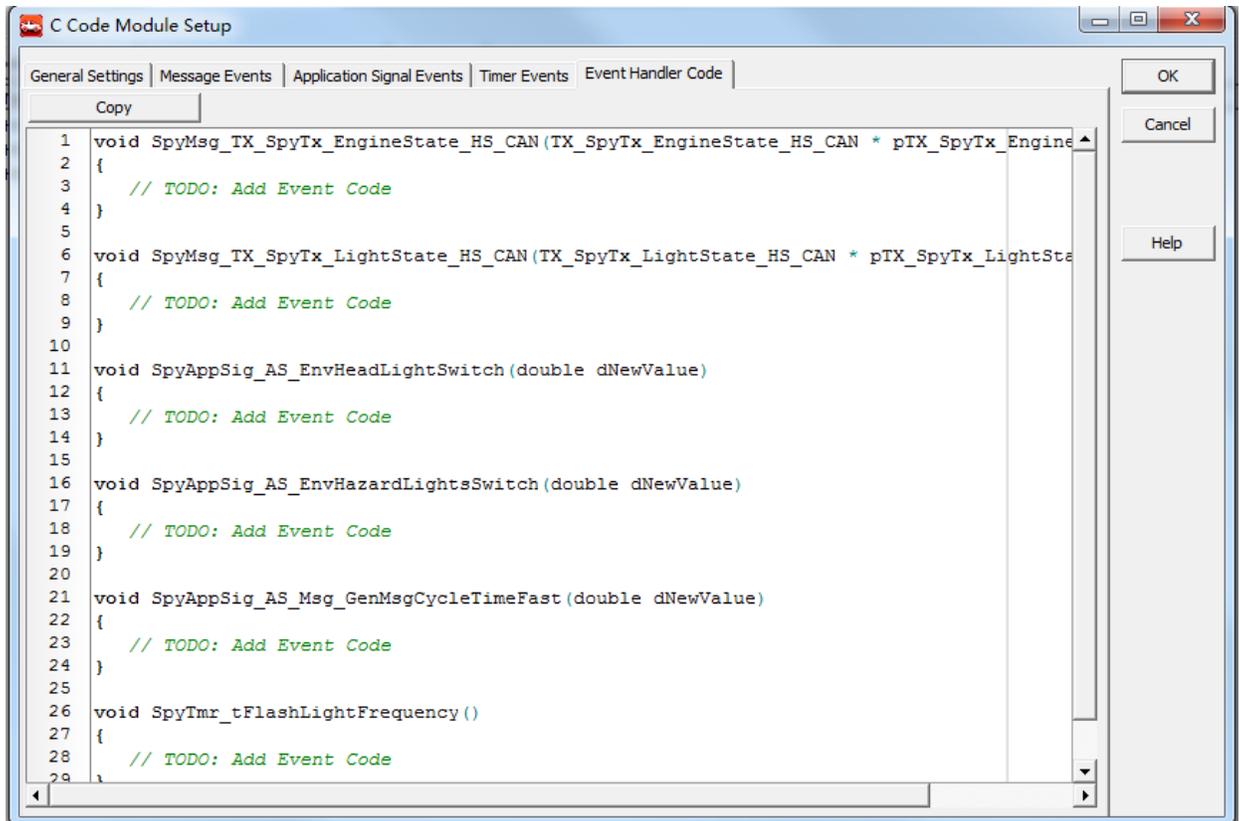


Figure 21: Settings to add the Event Handler code in a CCIF project

“Event Handler Code” is used to generate all the handler codes automatically. Copy all the codes and click “**OK**” button to close the window, then Paste them to *NodeName.cpp* file before compiling the node project

#### **4. Help links for VSPY**

##### **4.1 Full VSPY Help:**

<http://www.intrepidcs.com/support/ICSDocumentation/VehicleSpy/neoFrameMain.htm>

##### **4.2 CCIF:**

<http://www.intrepidcs.com/support/ICSDocumentation/VehicleSpy/CCIF.htm>

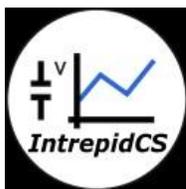
Working with CCIF:

[http://www.intrepidcs.com/support/ICSDocumentation/VehicleSpy/CCIFWorkingWith.  
htm](http://www.intrepidcs.com/support/ICSDocumentation/VehicleSpy/CCIFWorkingWith.htm)

##### **4.3 Tutorial for C Code Interface:**

[http://www.intrepidcs.com/support/ICSDocumentation/VehicleSpy/spyExampleCCIIntro.  
htm](http://www.intrepidcs.com/support/ICSDocumentation/VehicleSpy/spyExampleCCIIntro.htm)

## 5. Contact Us:



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