



# **The LabVIEW Style Book**

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## Color Gallery



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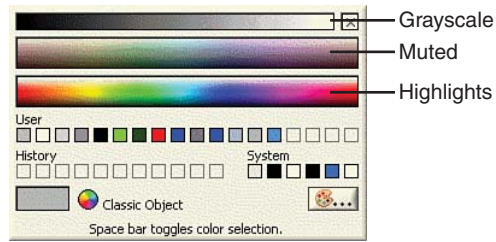
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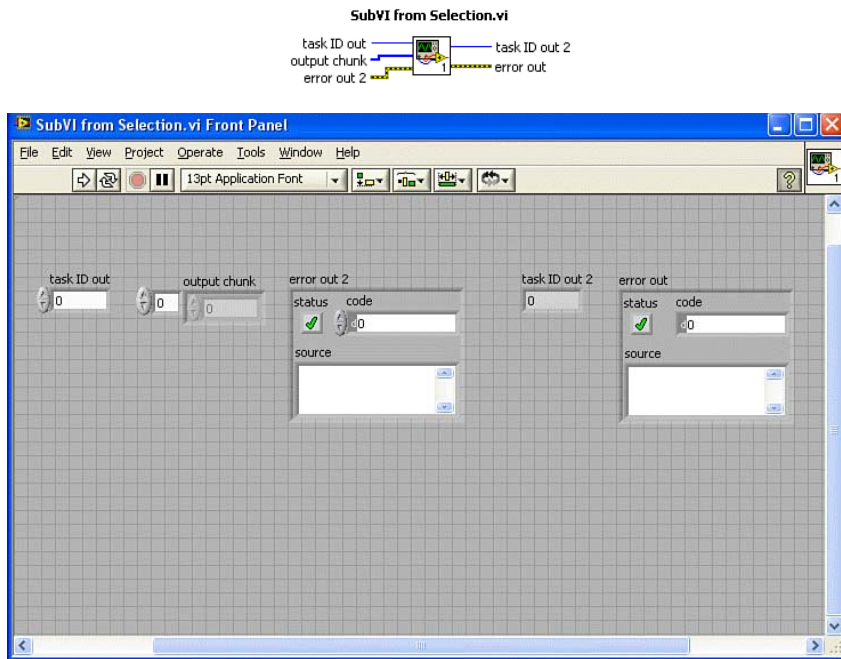
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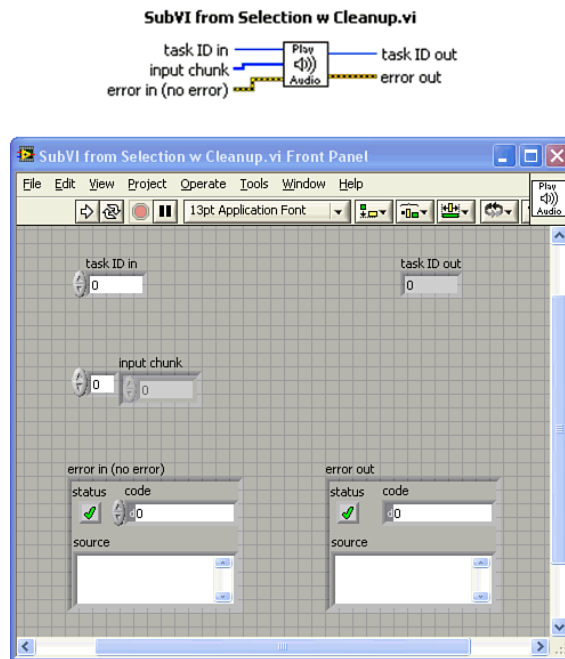


**Figure 3-12**

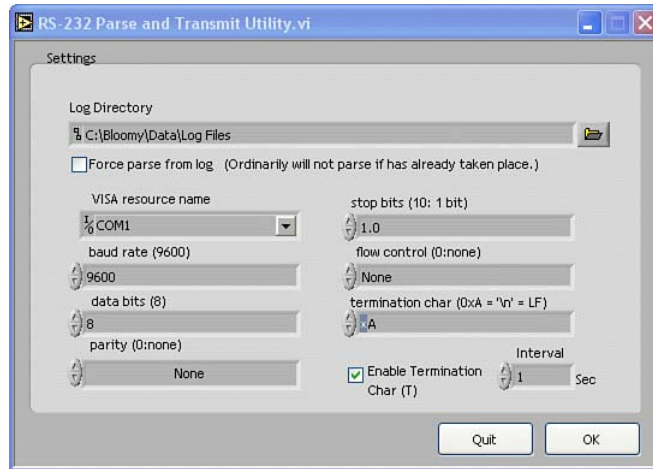
The LabVIEW color picker arranges colors into grayscale, muted, and highlight colors.



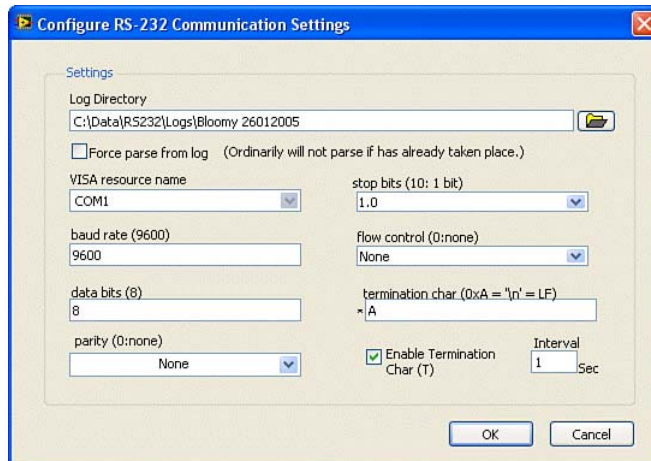
**Figure 3-14A**  
SubVI from Selection VI violates rules 3.15, 3.16, 3.21, and 3.40.



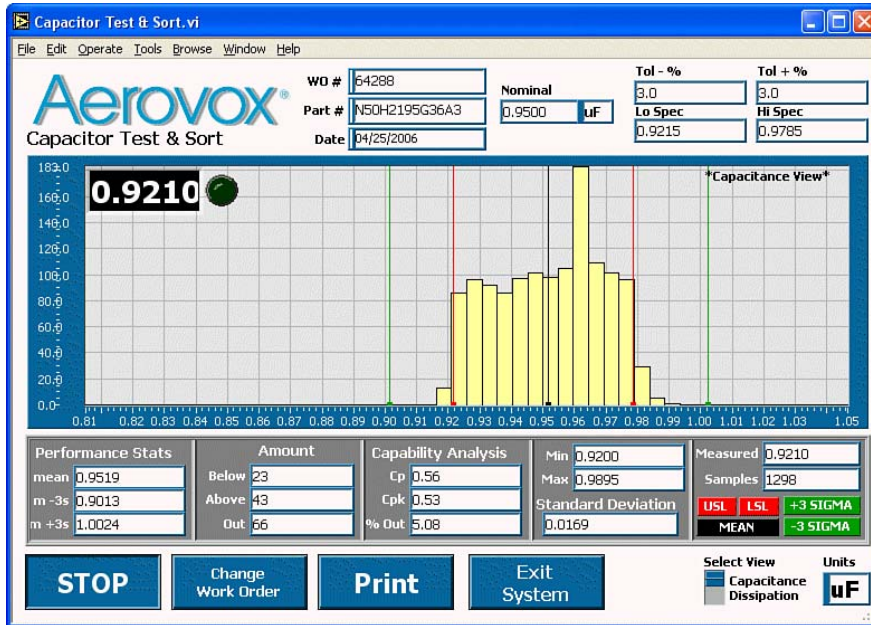
**Figure 3-14B**  
SubVI from Selection w Cleanup VI conforms to the rules for subVI front panels.



**Figure 3-15A**  
RS-232 Parse and Transmit Utility VI does not have a native operating system appearance.

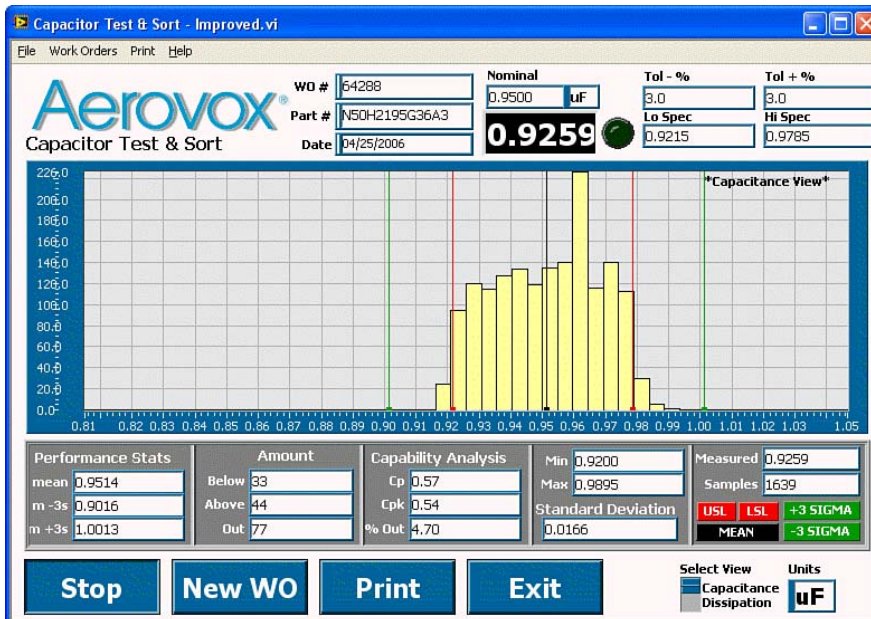


**Figure 3-15B**  
This revision uses Dialog window title and appearance, Dialog fonts, and System controls conforming to the conventions for good dialog VI style.



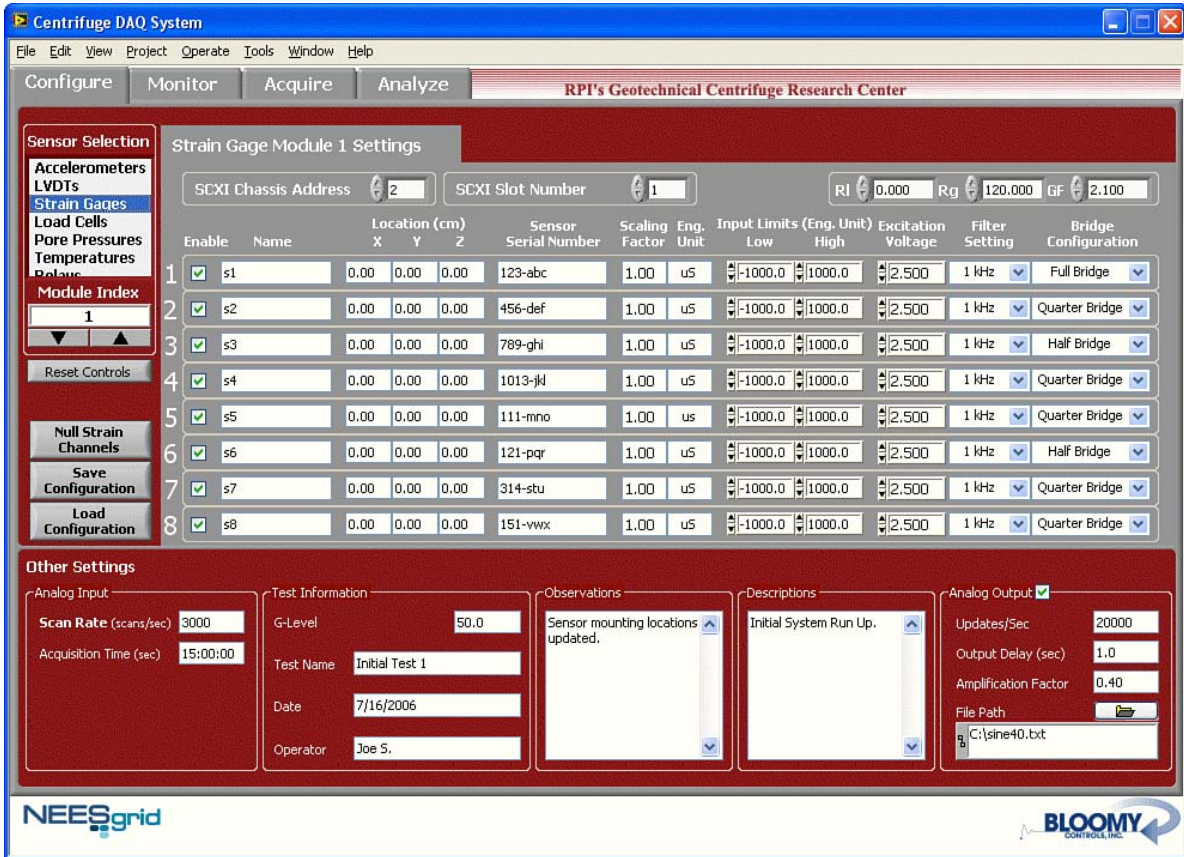
**Figure 3-16A**

The main GUI VI panel of a Capacitor Test & Sort application has a logical and intuitive layout, but it violates several rules regarding text, menu bars, and overlapping controls.

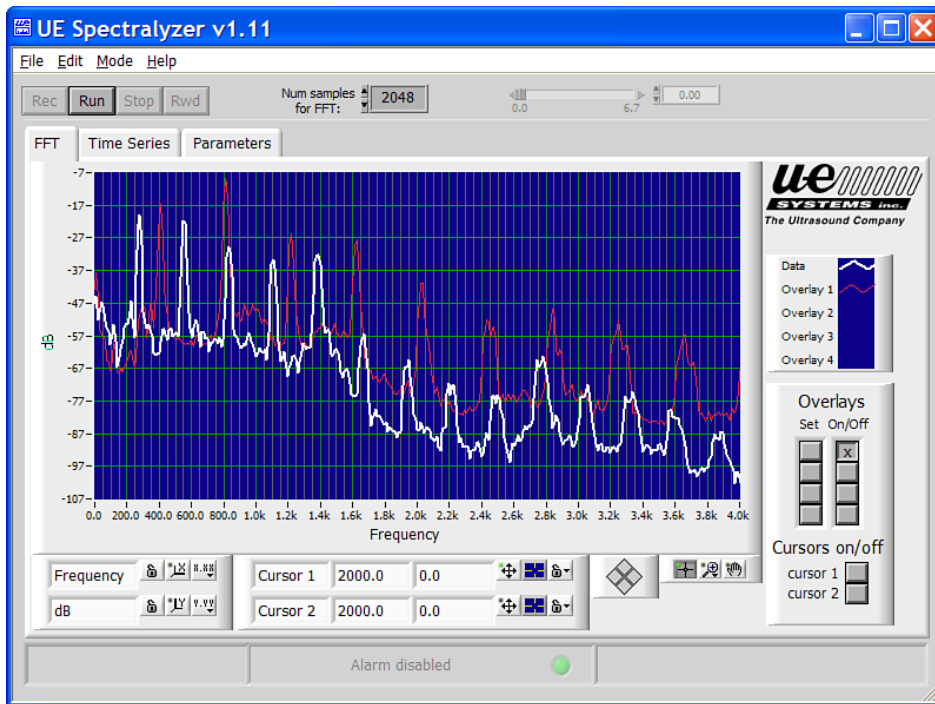


**Figure 3-16B**

The panel is improved, with succinct Boolean commands and consistent fonts, a custom menu bar for user navigation, and nonoverlapping indicators.



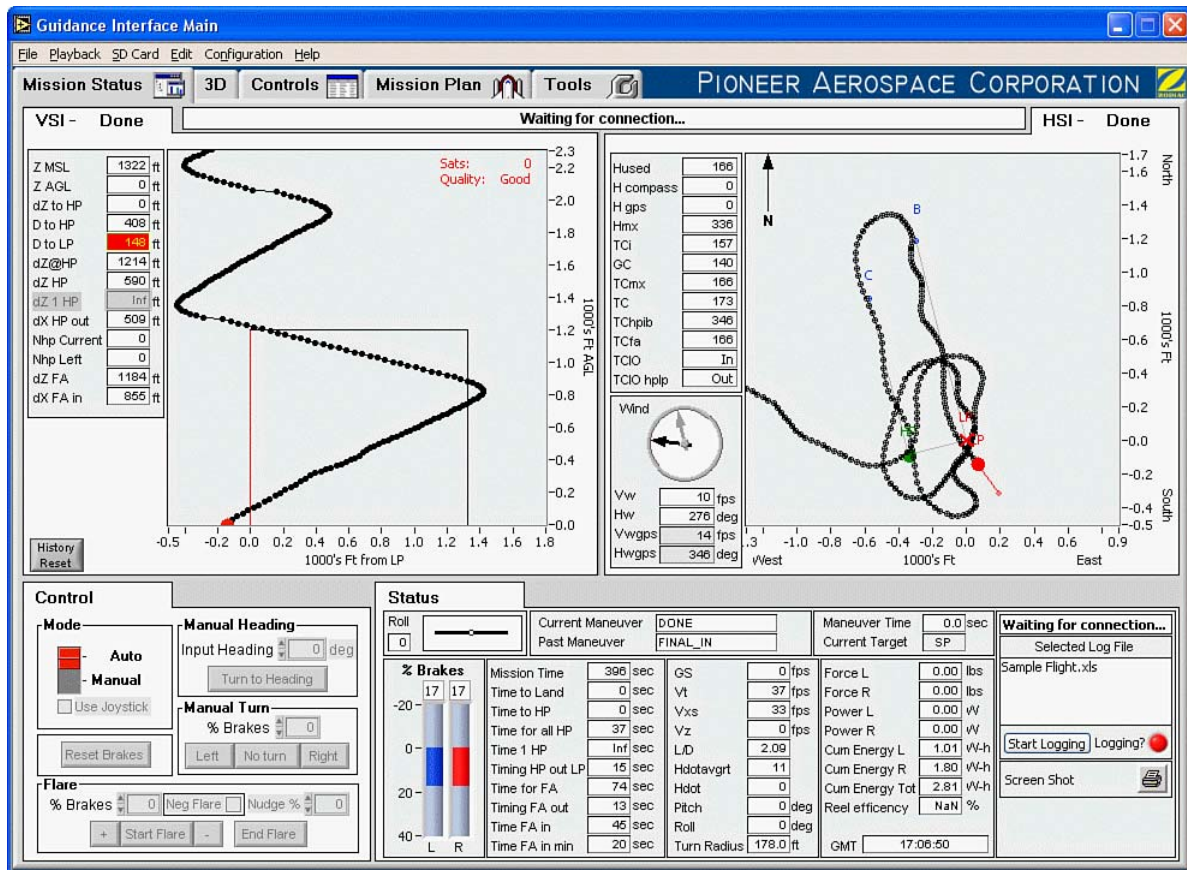
**Figure 3-17**  
Centrifuge DAQ research application for seismic event simulation



**Figure 3-18**

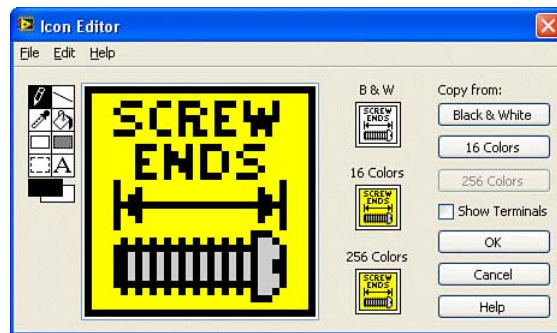
Spectralyzer is a commercial application for diagnosing mechanical wear of industrial equipment. The GUI conforms to most of the rules and appears very intuitive.





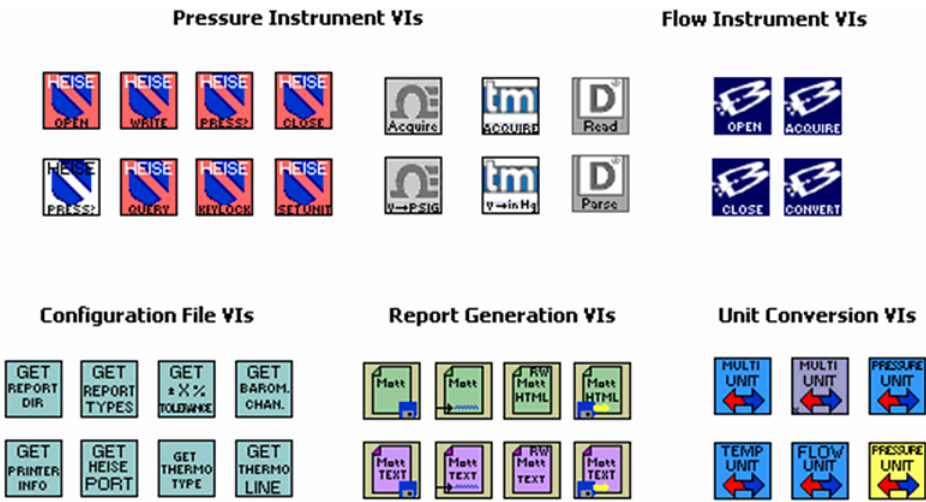
**Figure 3-19**

Parafoil Guidance Interface is a virtual cockpit. It contains a high density of data while maintaining good readability.



**Figure 5-3**

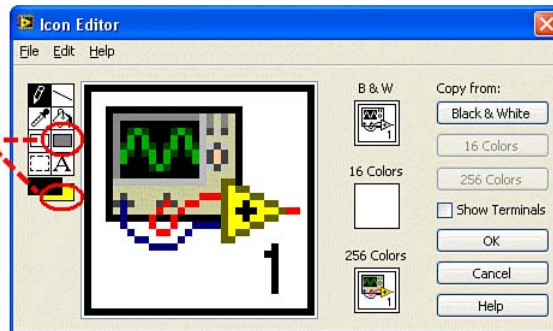
The icon of Find Screw Ends VI combines a glyph of a screw with two words created using 8-point small fonts.



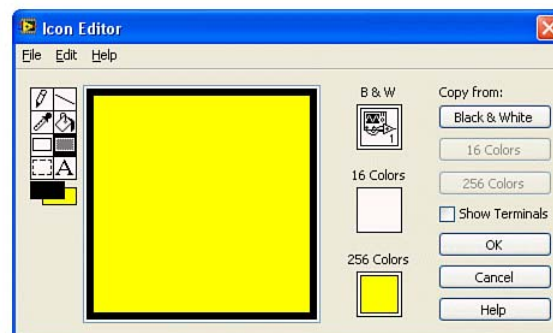
**Figure 5-4**  
An icon convention with unified styles for several sets of related VIs

1. Select background color

2. Double-click the filled rectangle tool

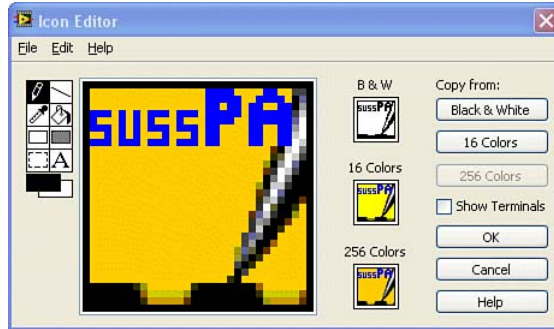


Initial icon with colored background and black border



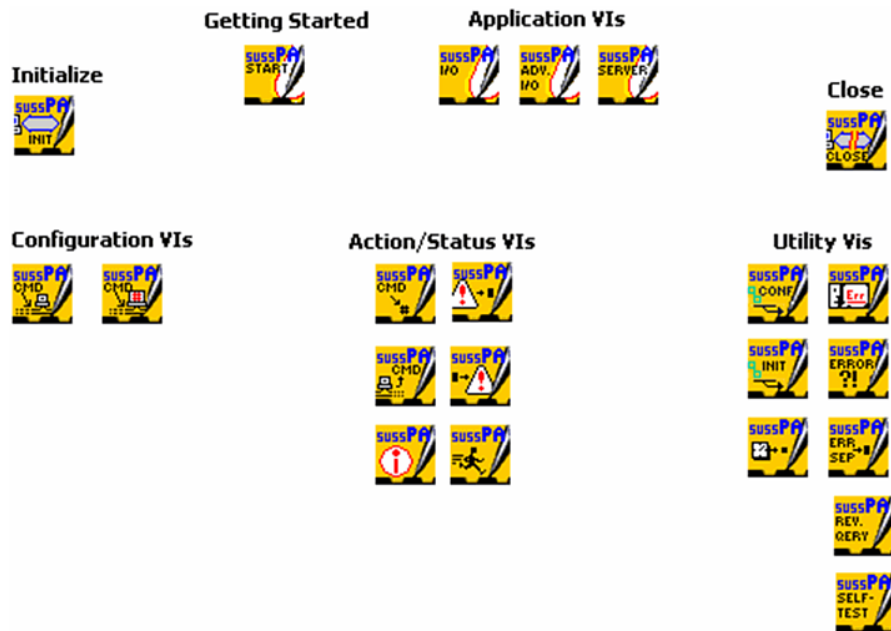
**Figure 5-5**

The top illustration is a new VI containing a default icon. Select the desired background color and double-click the **Filled Rectangle** tool to initiate an icon with a colored background and black border.



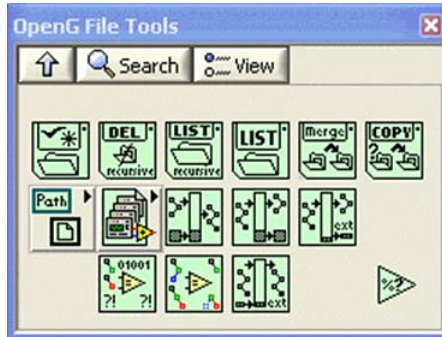
**Figure 5-6A**

The icon template for the Suss Interface Toolkit contains a glyph of a probe tip contacting a semiconductor device, and an acronym describing the instrument manufacturer and model.



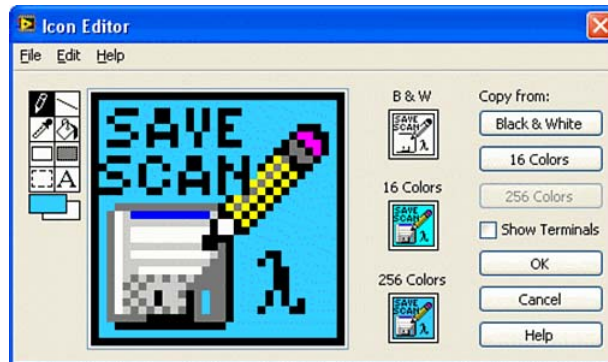
**Figure 5-6B**

All VIs contained in the toolkit are based on the template, as shown in the VI tree.



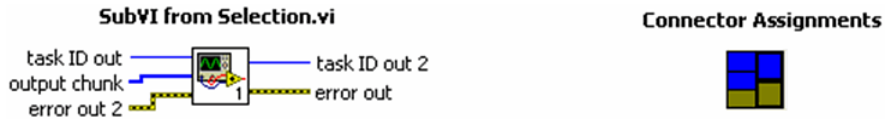
**Figure 5-7**

The **OpenG File Tools** palette contains icons that resemble functions from the LabVIEW **File I/O** palette. The OpenG icons are shaded green, to distinguish them from the LabVIEW functions.



**Figure 5-8**

The floppy disk and pencil graphics are copied from an Express VI on the **File I/O** palette. The background color and text are customized, for distinction.



**Figure 5-14A**

SubVI from Selection VI violates multiple style rules, including default icon and counterintuitive terminal labels.



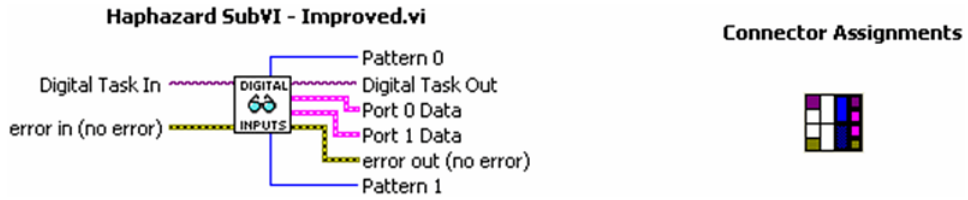
**Figure 5-14B**

SubVI from Selection w Cleanup VI contains a meaningful icon, intuitive terminal labels, and the standard 4x2x2x4 connector pattern.



**Figure 5-15A**

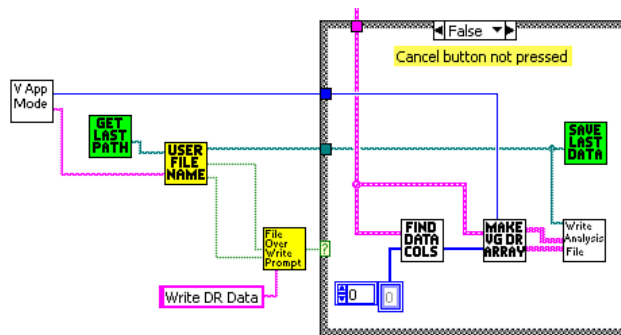
Icon contains text drawn freehand, and connector assignments are unconventional.



**Figure 5-15B**  
 The subVI icon has been improved using 8-point small fonts and a glyph of a pair of glasses. The DAQmx task passes through the top left and right terminals of the 4x2x2x4 connector pattern.

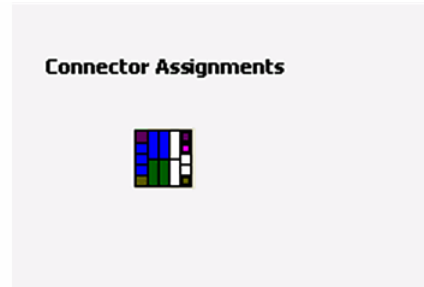
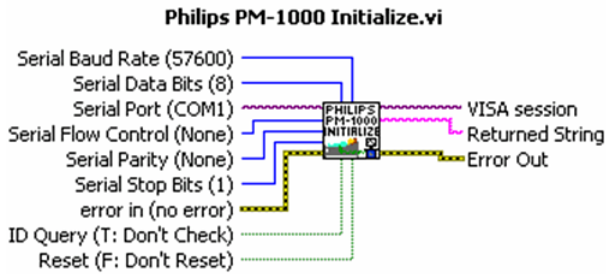


**Figure 5-16A**  
 This icon illustrates Bob's bold font.



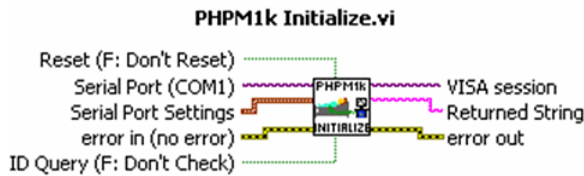
**Figure 5-16B**  
 Bob's bold font on several icons in a diagram section appears to shout.





**Figure 5-17A**

Instrument driver VI for a fictitious medical instrument has a text-heavy icon and too many terminals.

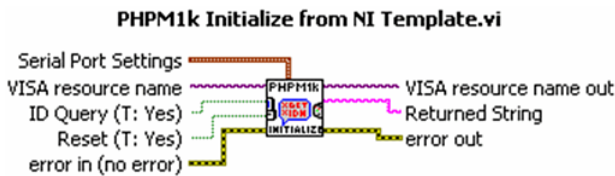


**Connector Assignments**



**Figure 5-17B**

The VI has been improved with a banner containing the instrument prefix, a centered glyph, cluster input, and fewer terminals.

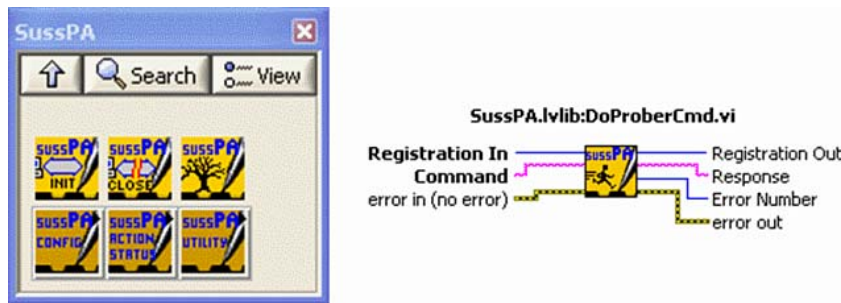


**Connector Assignments**



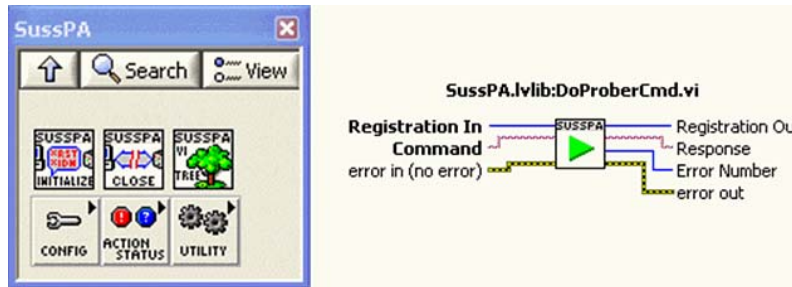
**Figure 5-17C**

The icon and connector of the Initialize VI generated automatically using the Create New Instrument Driver Project utility. The utility uses a template to create a standard glyph, connector assignments, and terminal labels.



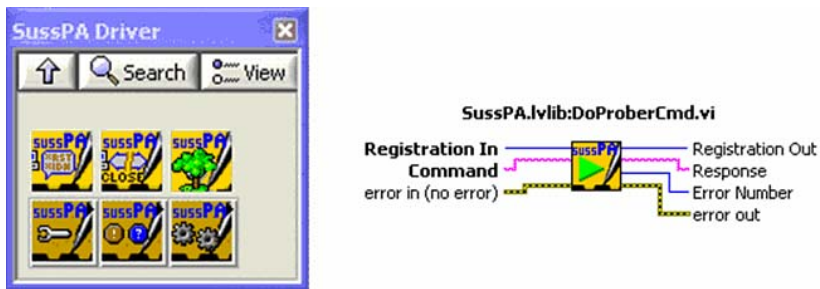
**Figure 5-18A**

The **Functions** palette for the Suss Interface Toolkit for LabVIEW, a commercial product that controls a semiconductor wafer probe system. All icons share a common glyph describing the instrument. DoProberCmd VI is a subVI from the **Action/Status** subpalette containing an artful silhouette of a runner and common glyph.



**Figure 5-18B**

An alternate icon convention consists of the standard glyphs from the instrument driver template. The icon for DoProberCmd VI contains a sideways triangle, a standard glyph for Run, Start, and Initiate. This convention weakens the association with the wafer prober.



**Figure 5-18C**

The standard glyphs from the instrument driver template are merged with the instrument-specific glyphs to maintain strong association to both the wafer prober and instrument driver icon conventions.



**Connector Assignments**



**Figure 5-19A**

The lengthy terminal labels of Form Com Params Cluster Into a String VI are truncated by the Context Help window.

**Form Com Params Cluster into a String Improved.vi**

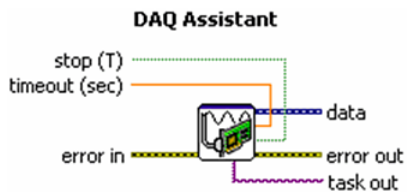


**Connector Assignments**



**Figure 5-19B**

The label lengths have been reduced, and error terminals have been applied to promote proper data flow.



**Connector Assignments**



**Figure 5-20**

DAQ Assistant Express VI has inputs assigned to terminals on the right, causing wire crossovers on the calling VI diagrams.

**Confirm Quit**  
[Confirm Quit.vi]



**Connector Assignment**



**Figure 5-21A**

Confirm Quit VI has a simple graphic that has been copied from a Windows system prompt. The type of confirmation is not identified by the icon.

**Confirm Quit**  
[Confirm Quit - Revised.vi]



**Connector Assignments**



**Figure 5-21B**

The icon has been modified to indicate the type of confirmation. The standard 4x2x2x4 connector pattern has been applied, as well as the assignment of error terminals to facilitate execution ordering.

**Print VI in Landscape Mode.vi**



**Connector Assignments**

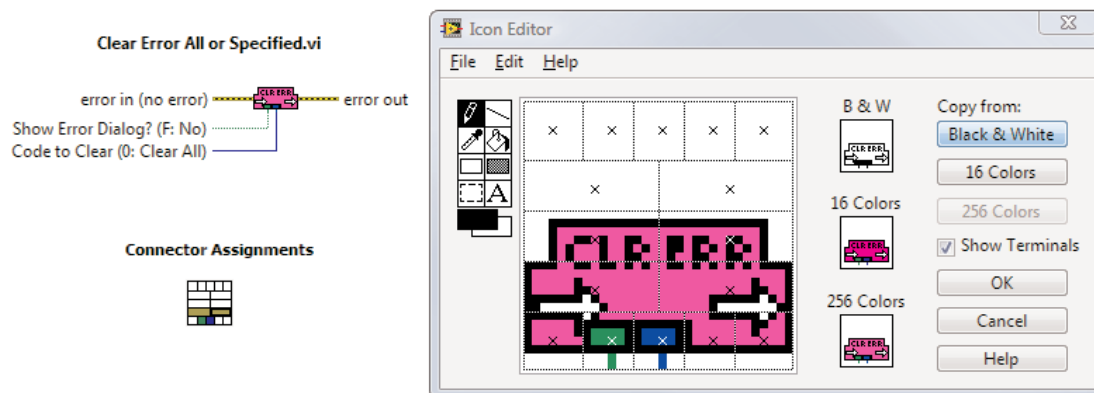


**Figure 5-22**

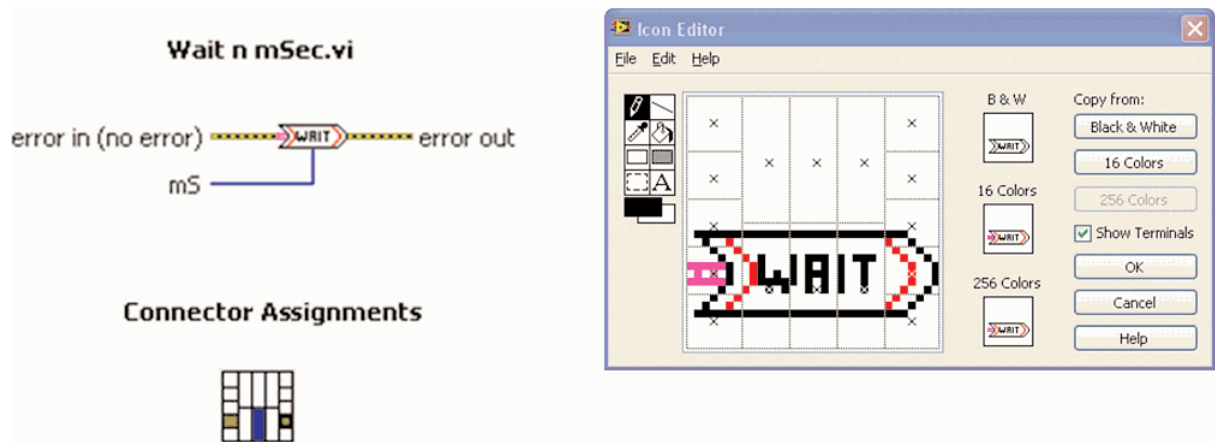
Print VI in Landscape Mode VI is composed of three-quarters demonstrative graphic and one-quarter text.



**Figure 5-23**  
Dynamic VI Path Builder VI is composed of two-thirds demonstrative graphic and one-third text.

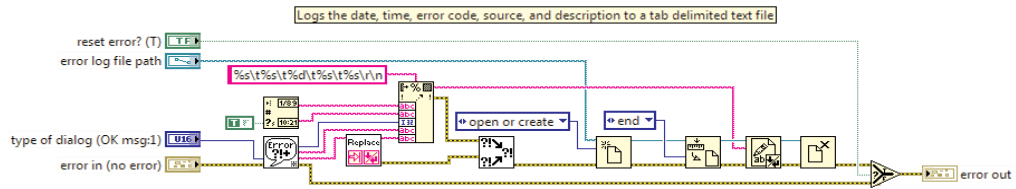


**Figure 5-24**  
Clear Error All or Specified VI has a custom border providing a unique shape, and a 5x3x3x5 connector pattern rotated 90 degrees.



**Figure 5-25**

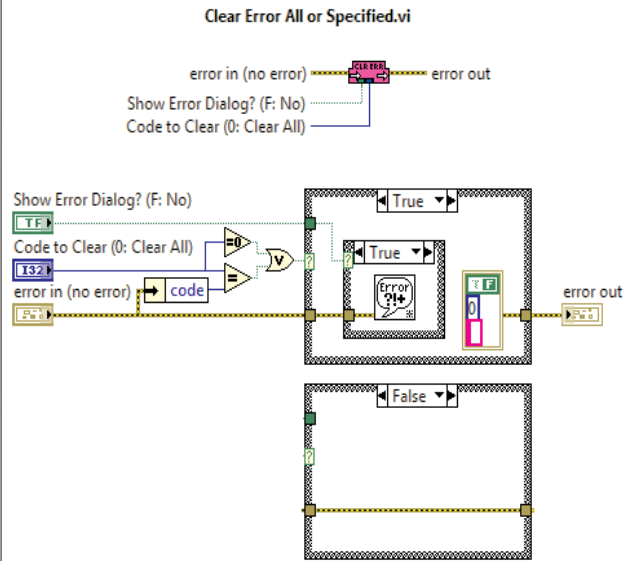
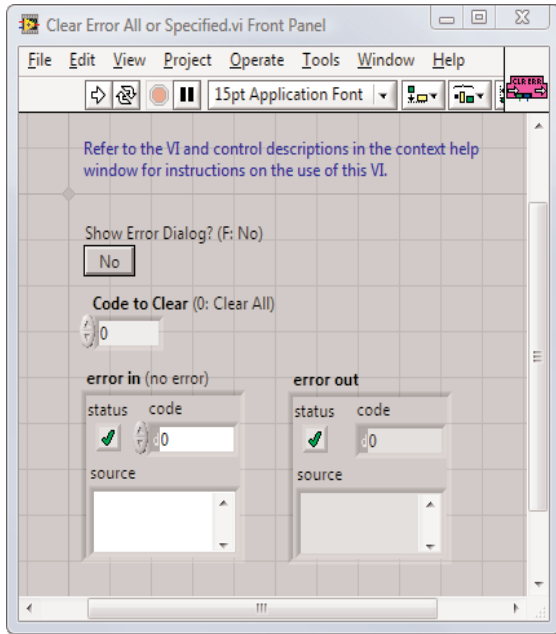
Wait n mSec VI has a custom border and promotes good data flow style. It has a 5×3×3×5 connector pattern with three terminals assigned.



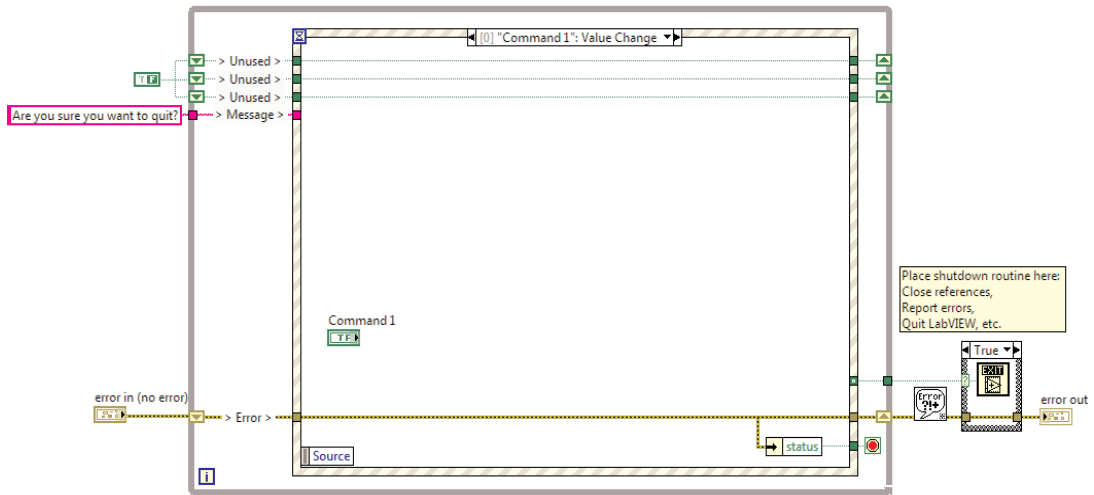
**Figure 7-9A**

The date and time are combined with the error message, source, and code, and are logged to a tab-delimited text file. Readability is maximized using this approach.



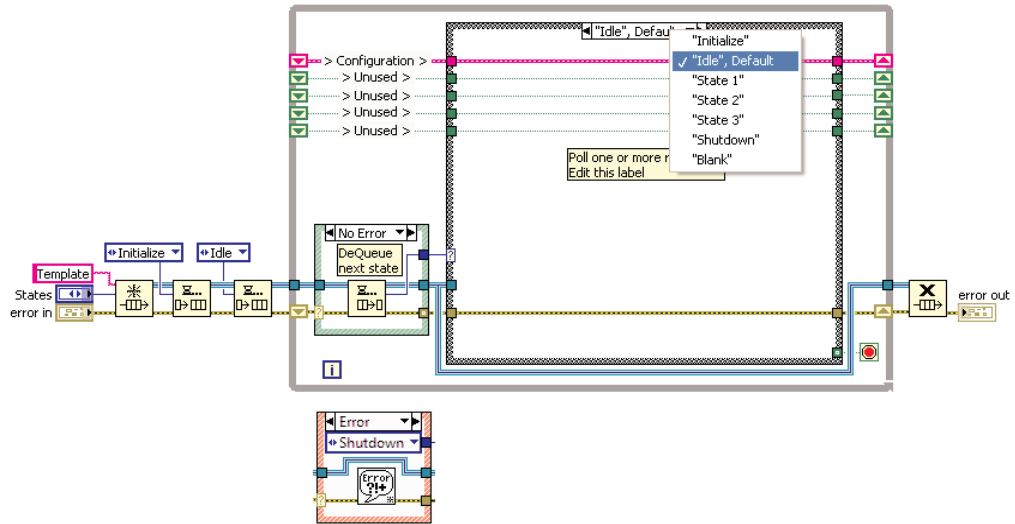


**Figure 7-16**  
 Clear Error All or Specified VI is a utility that selectively clears errors and warnings according to the value of **Code to Clear**.

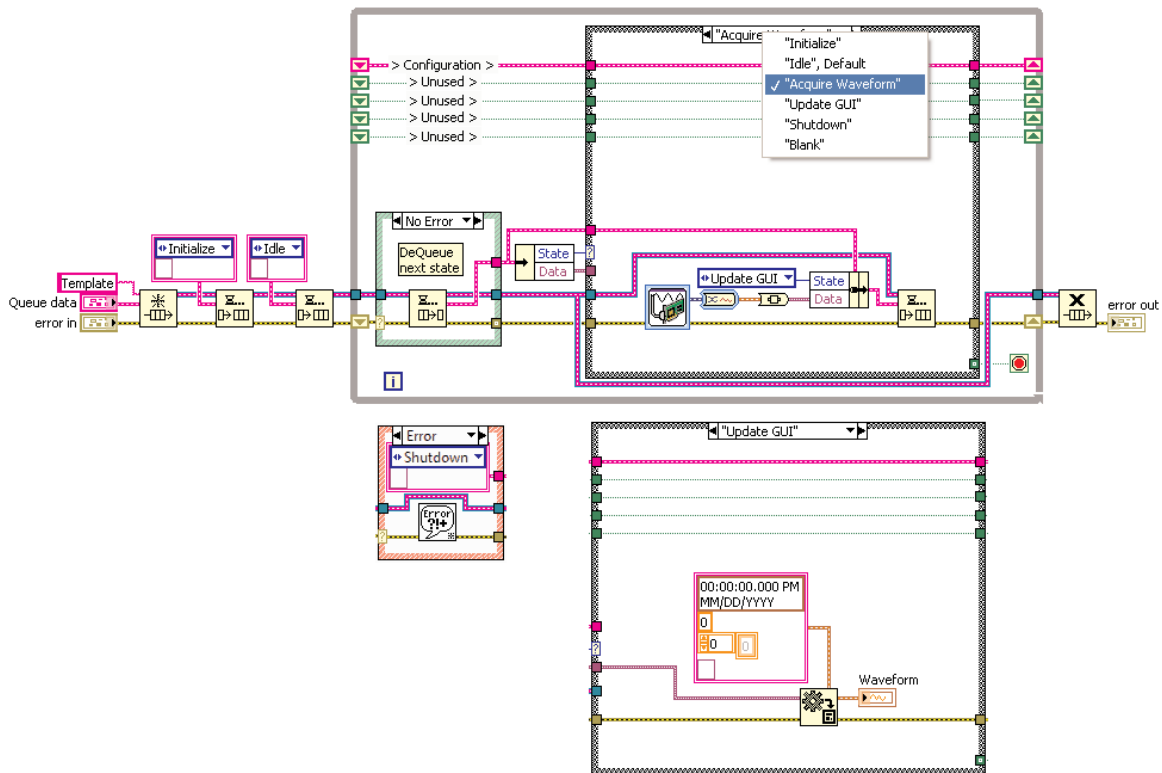


**Figure 8-6B**

The diagram consists of an Event structure within a While Loop containing shift registers, and a shutdown routine outside the loop. The control terminals are in their respective **Value Change** event cases.

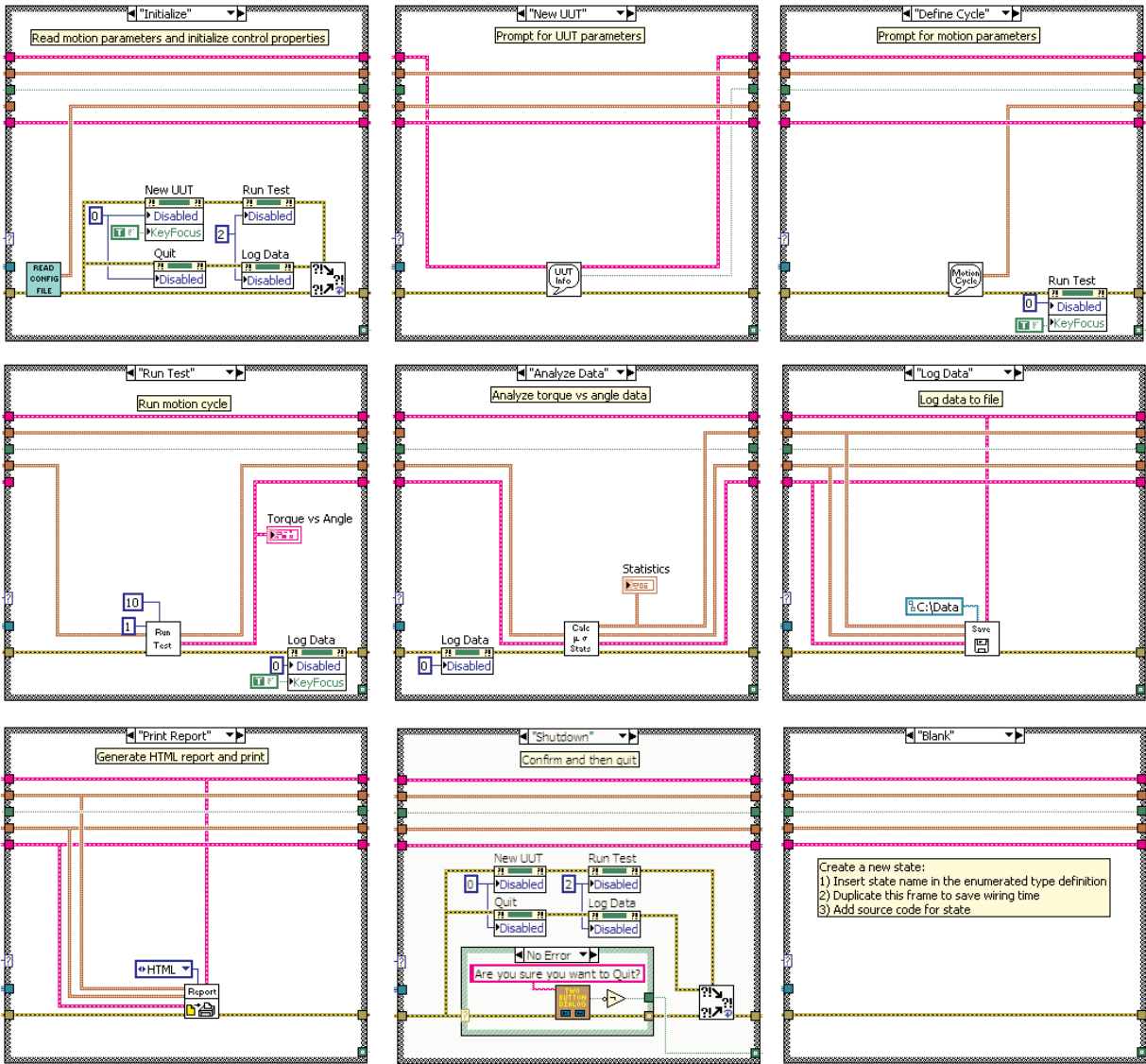


**Figure 8-12**  
 A template for the Queued State Machine design pattern, which maintains multiple states in a buffer.



**Figure 8-13**

The queue is used to pass data between states via a cluster containing a variant and state enumeration. This reduces wires and shift registers, but the data is not accessible in subsequent states after dequeuing.



**Figure 8-14C**

A separate state is delineated for each of the application's primary tasks, in addition to **Initialize**, **Idle**, **Shutdown**, and **Blank**.