FlexStand Operator Interface™ - The Flexible TestStand Operator Interface

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CIM Industrial
Systems A/S

Introduction

Do you need a professional looking operator interface for TestStand? Looking for a flexible and easy to use testing solution? Your search is over! FlexStand Operator Interface is invented for that!

FlexStand Operator Interface is a flexible graphical operator interface for TestStand. It provides a user friendly platform to build your own custom TestStand operator interface, using the easy-to-use LabVIEW environment. Only basic LabView and TestStand skills are required.

Looking for faults?
FlexStand will
show it all,
right in your interface!
FLEXSTAND

What is FlexStand Operator Interface?

FlexStand Operator Interface allows you to create dynamic operator interfaces that fit the tasks for the device to be tested. The operator interface can even be changed during the test, e.g. when

a barcode is scanned. A number of tabs can be changed automatically or in user control so the operator receives the desired amount of information based on the specific situation.

We also add the possibility to get rid of all the TestStand dialogs. We have invented a framework that can load all your LabVIEW dialogs, so it seems to be a integrated part of the operator interface.

FlexStand framework loaded with different plug-ins

Creating a solid and reliable operator interface can be a hard and time consuming job. Due to increasing demand for a short time-to-marked in industrial manufacturing, development of the test equipment must often be accomplished within a very short timeframe.

CIM Industrial Systems has developed the FlexStand Operator Interface framework to provide easy-to-use LabVIEW building blocks, resulting in reduced development time and professional looking operator interfaces.

We have made it
easy for you
to get the big picture!
We even make your
faults look good!
**FLEX**STAND

The Operator Interface

By using FlexStand Operator Interface you can create simple or advanced operator interfaces for TestStand using only basic LabVIEW programming. The figure below illustrates an example of an advanced operator interface, with several buttons and much information. This example is shipped with FlexStand Operator Interface. It is a good example of what FlexStand Operator Interface *can* look like. It can also be designed to be very simple and with less information. Please notice the integrated serial number and test status dialog, which is loaded into the framework instead of an popup dialog.
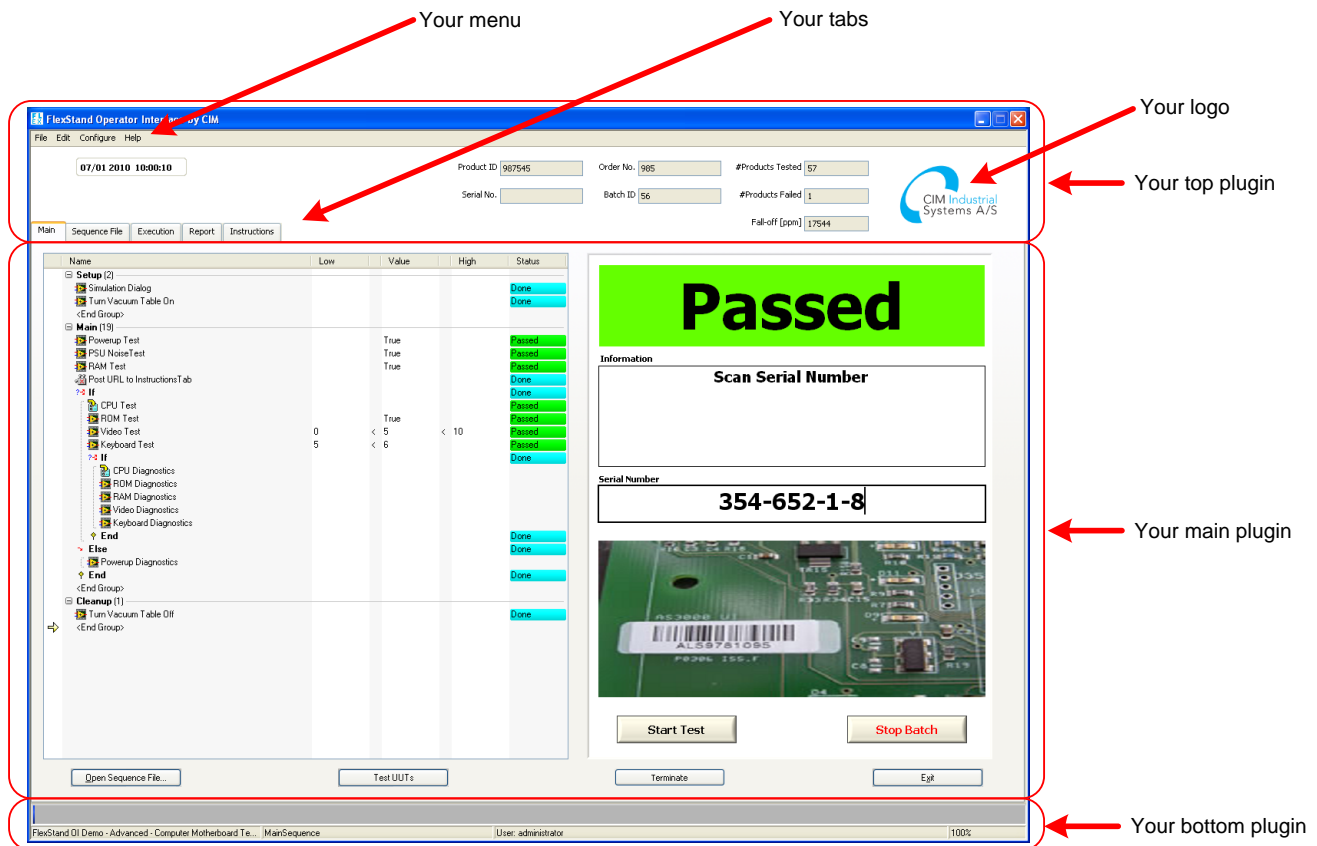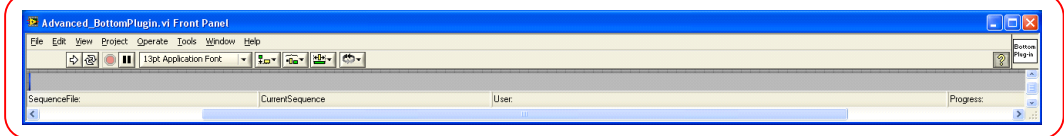

The operator interface is dynamic changed to the selected functionality by loading small VIs into the framework. The simple VIs, used for the configuration above, is shown below.
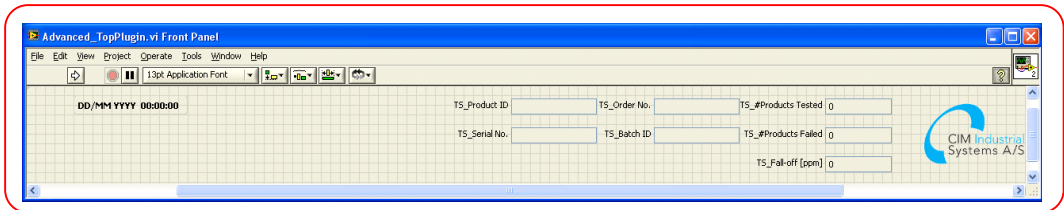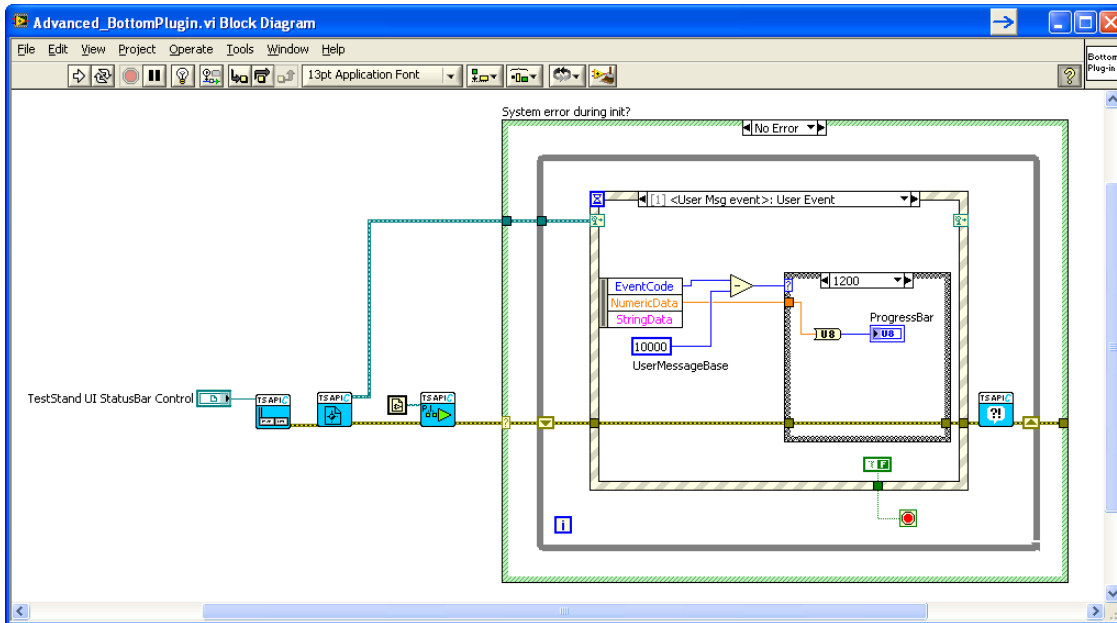
Top plugin
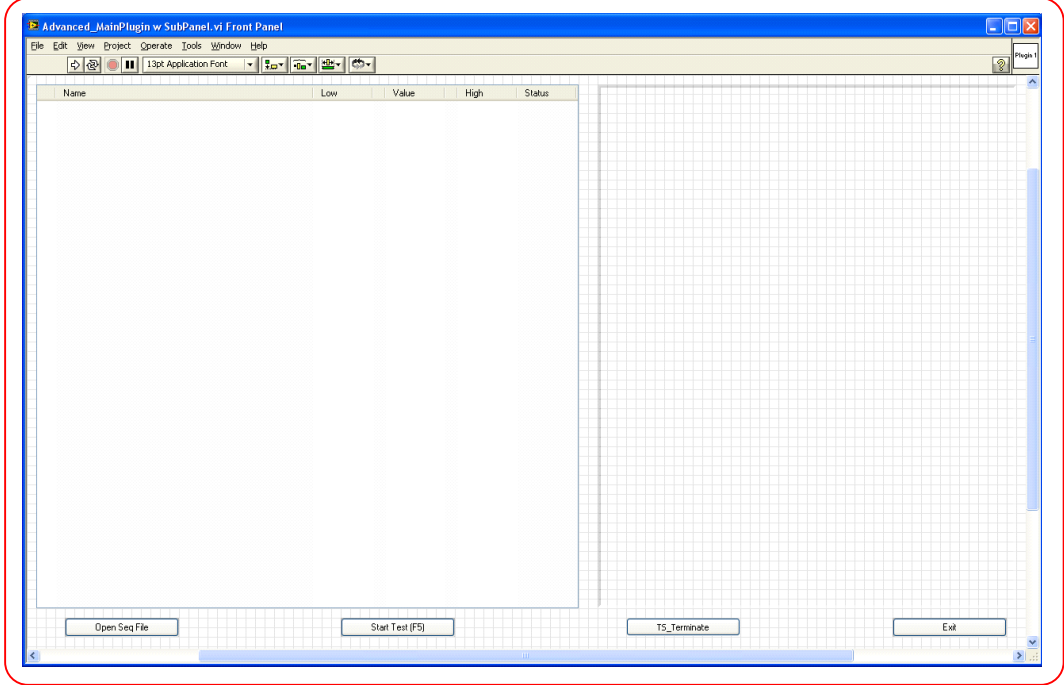
Main plugin

Bottom plugin

The amount of source code in the VIs above is low. We have made all the tools to easily develop the plug-ins. Below the block diagram for the bottom plug-in example is illustrated to show how easy it's to change it to another behaviour.

The operator interface is build of three or more plug-ins. This way you only have to develop simple VIs with limited complexity. All VIs can be customized exactly to your needs and requirements.

The operator interface is based on three main components:
- Top plug-in
- Main plug-ins (up to 10 main plug-ins)
- Bottom plug-in

The framework loads all your plug-ins into one unified program. Furthermore there may be 10 different main plug-ins loaded within the framework tab control. The operator of the test station may choose between the main plug-ins using the tabs.

The plug-in VIs are easily configured and the framework automatically resize and scale their front panels to fit together. The FlexStand Operator Interface framework can adapt to many different scenarios, from PCB tests and final tests, to simple looking download stations.

FlexStand Operator Interface includes three fully functional examples with various plug-ins; an advanced, a standard and a simple example. They are shown below. You can easily start developing you own operator interface from one of these
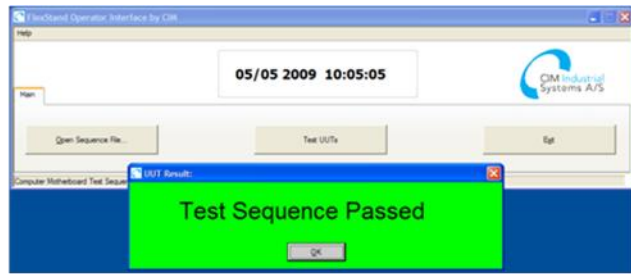
Not all faults
look bad!
Just think out
of the box...

FLEXSTAND

examples. They are very different in complexity and covers different targets.
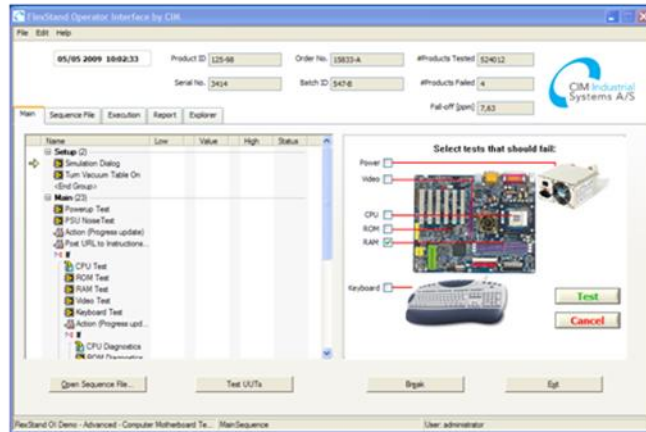

Simple

Standard

Advanced

An important brick in the puzzle

FlexStand Operator Interface is a natural part of the TestStand family, providing an operator interface for daily use in the production.

FlexStand Operator Interface is build upon the TestStand API and can thereby control the execution of various sequences, display results and provide an overview of the entire test station.
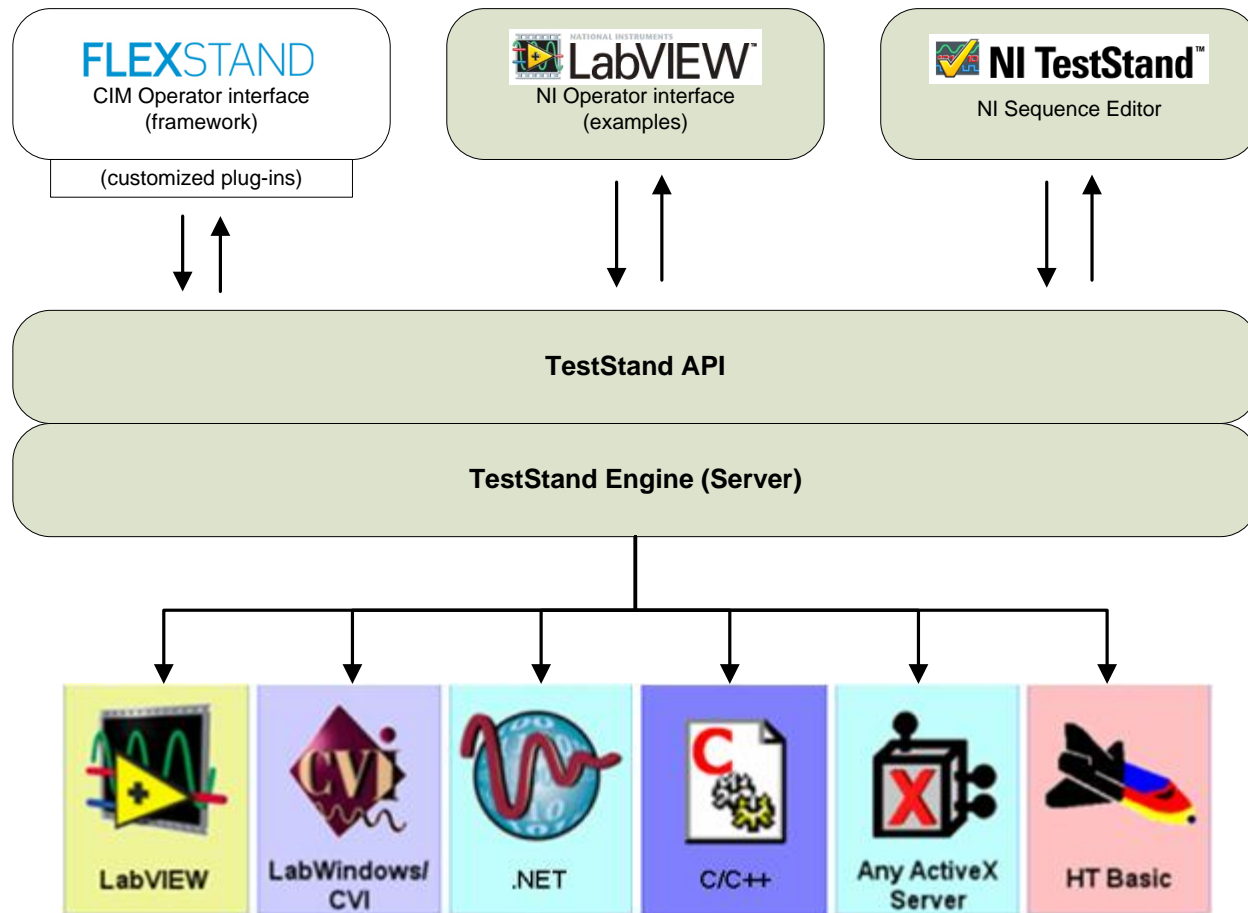

The figure above shows an overview of the TestStand platform. The FlexStand Operator Interface product is placed in the top left corner and directly connected to the TestStand API. FlexStand Operator Interface hereby replaces the alternative to develop your own custom operator interface, shown in the middle.

Easy implementation in LabVIEW

By using FlexStand Operator Interface, you can create simple or advanced operator interfaces for TestStand using only basic LabView programming. A specially designed interface (FlexStand LV API) hides all the complex TestStand properties and methods that usually make the task of creating operator interfaces difficult. FlexStand Operator Interface fully integrates into the LabView development environment, including a tools palette and examples.

The FlexStand Operator Interface tools are made of several advanced TestStand and LabVIEW API functions, each wrapped in a simple-to-use LabVIEW VI. These VIs make it easy for LabVIEW developers to create and modify operator interface plug-ins. Below is illustrated how we have moved all the complex TS API function into simple LV VIs in the FlexStand LV API.
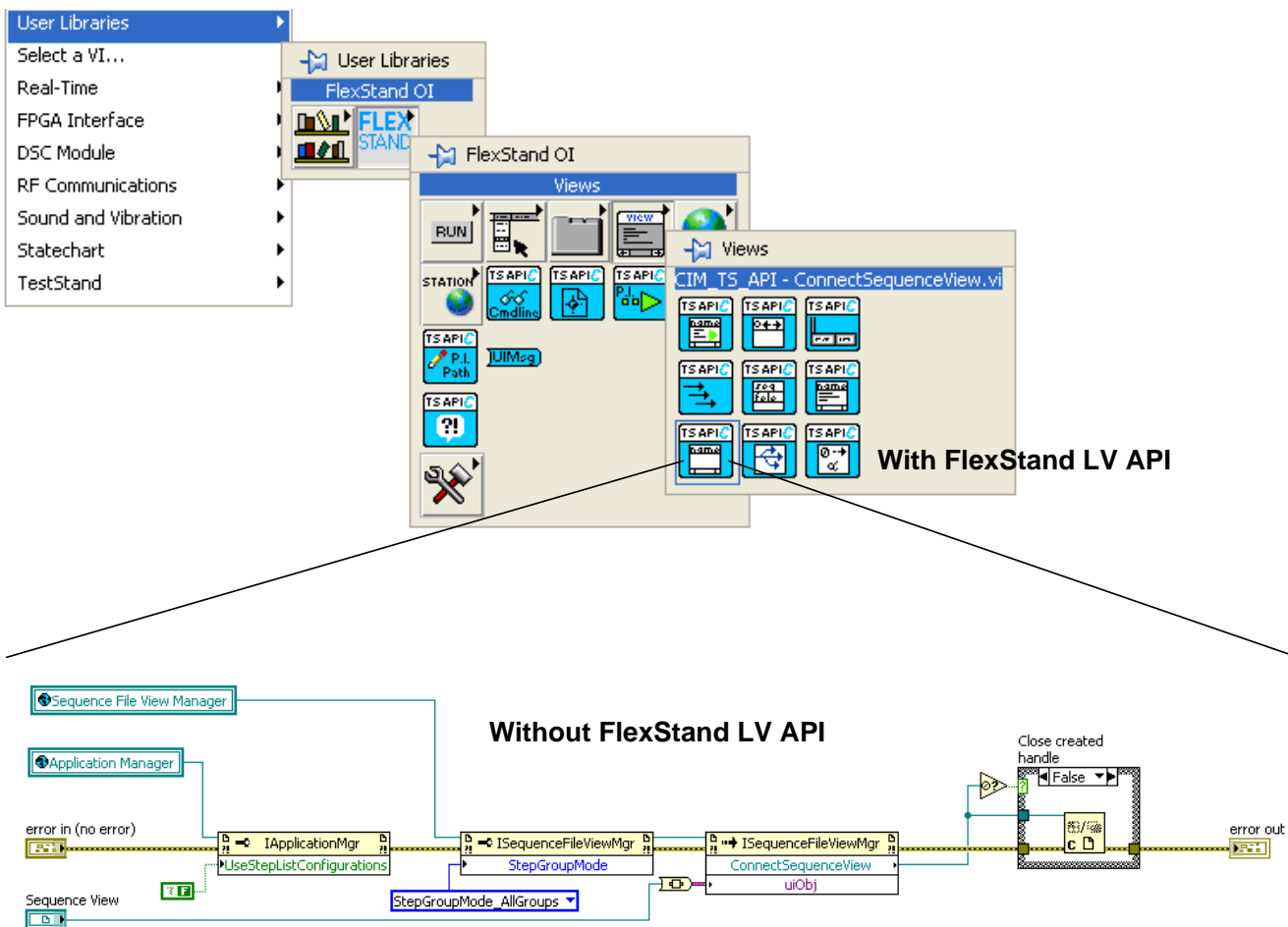
Above the LabVIEW palette installed with FlexStand Operator Interface is shown. All the commonly used TestStand functions are organized into a framework of simple-to-use LabVIEW VIs. These VIs are based on a complex implementation of advanced TestStand and LabVIEW API.

There are functions to start, pause and stop the execution of sequences. Functions to create an Execution view, Report view and Sequence view and many more valuable features.

Using the FlexStand Operator Interface tools

Developing an operator interface with the FlexStand Operator Interface tools is simple and easy. We have wrapped all the complexity into simple-to-use VIs. A short plug-in example on how to connect a few TestStand controls to the correct behaviour with the FlexStand LV API is shown in the figure below.
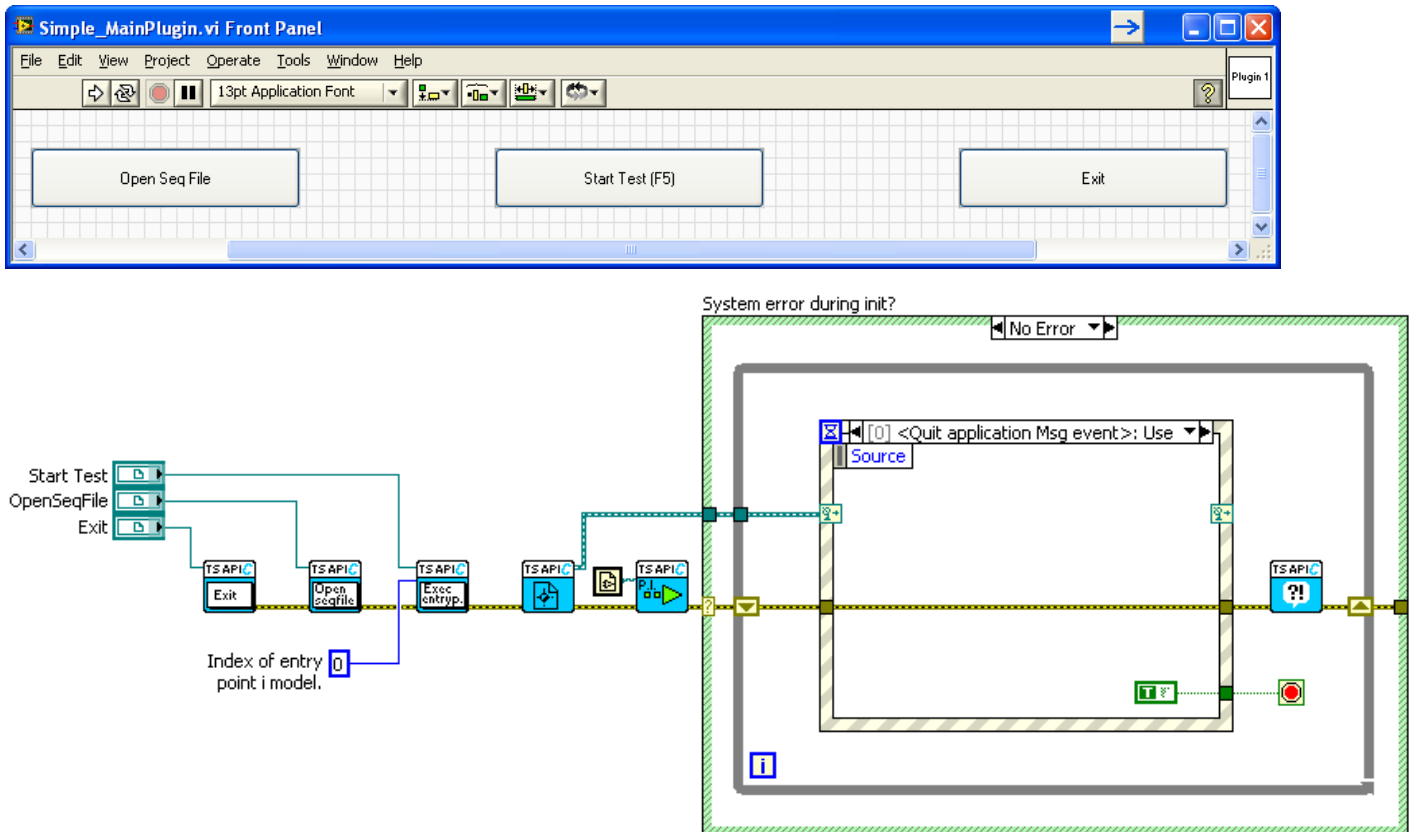

Just use the standard TestStand ActiveX LabVIEW controls, connect them to our FlexStand LV API VIs and it will have the selected behaviour. You can also add your own LabVIEW code into the plug-ins and callbacks.

FlexStand Operator Interface is also wrapping the TestStand API Events to dynamic LabVIEW Events which make it easy for the developers to use in their custom implementation. This is shown in the Event structure above, where the quit application event from the TS API is send to the plug-ins, that can do the selected operations.

Benefits using FlexStand Operator Interface

Developing an operator interface from scratch is a very time consuming task. With FlexStand Operator Interface you get an easy start and can swiftly reach the complexity you need.
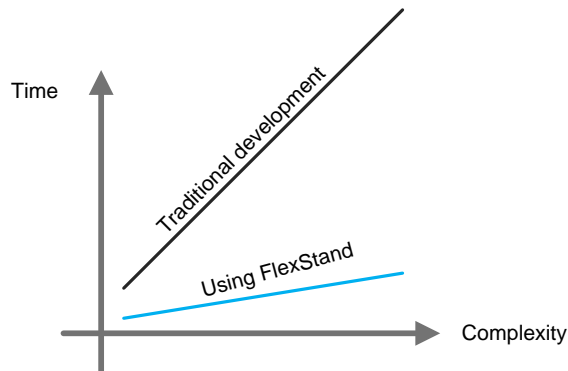
Based on our experience it is a tough job to create new operator interfaces, even if they are based on a functioning example. With FlexStand Operator Interface you get an easy start and a good platform at a low cost.

Key features

- ✓ **Single Framework.** Single Framework for different testers.
- ✓ **Easy Plug-in architecture.** Top plug-in, bottom plug-in and up to 10 main plug-ins.
- ✓ **Integrated LabVIEW Dialogs.** The plug-ins can load standard LV VIs into its subpanels, to avoid user dialogs during test.
- ✓ **Examples.** Jumpstart your project with the Simple, Standard or Advanced example.
- ✓ **Language localization.** Customize the language interface by changing a simple configuration file.
- ✓ **Custom menu.** Supports TestStand standard menu and custom menu entries.
- ✓ **LabVIEW palette.** Palette including functions for sequence view, report view, button control, status bar, tab control and many other functions.
- ✓ **Callbacks.** Create advanced functions using the powerful Callbacks technique.
- ✓ **Tab control.** Including automatic tab change and show/hide tabs.
- ✓ **Command line parameters.** Supports TestStand standard parameters and Custom defined parameters.
- ✓ **Programmers Reference manual.** Well documented Guide and API.

Learn more

Learn more at the FlexStand Operator Interface website [hotlink to: http://www.flexstand.eu]