



OSA-RTS END-TO-END DEMONSTRATION

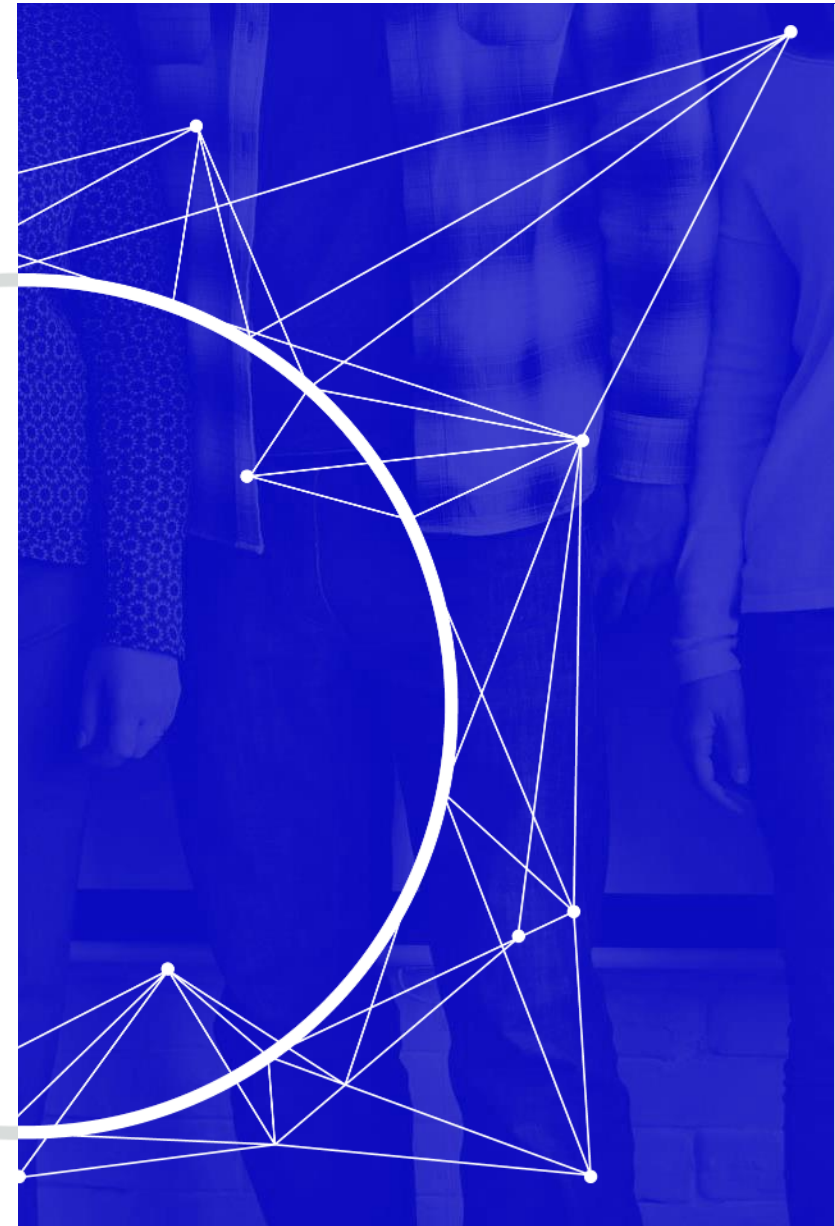
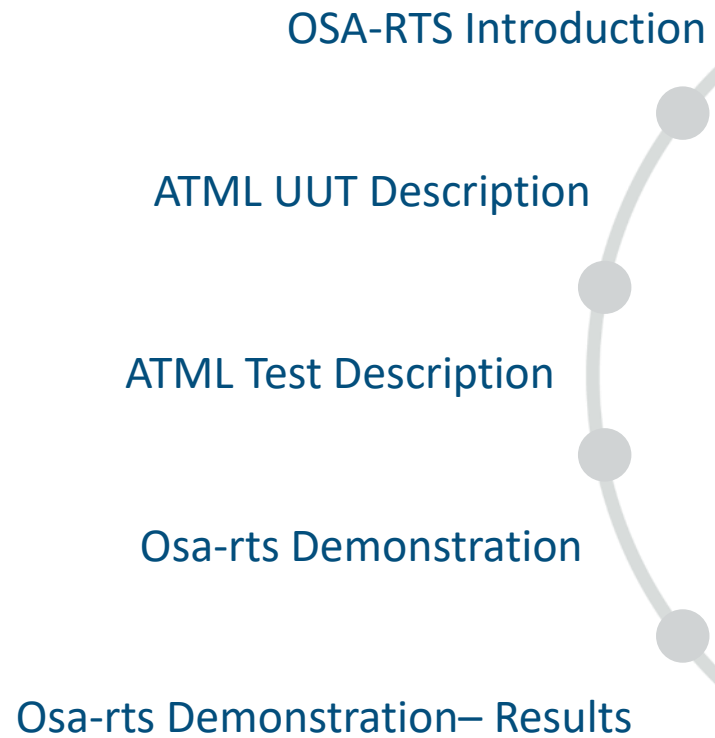
OSA-RTS DEMONSTRATION



SPHEREA

OUTLINE

OSA-RTS DEMONSTRATION



SPHEREA



OSA-RTS INTRODUCTION

- The Open System Architecture Runtime System (OSA-RTS) provides a common framework of shared ATS components that implement ATML solutions for translating Test Descriptions and Test Equipment Descriptions into “run-able” test programs.
- The current OSA-RTS framework has been designed for the C, C++ and C# textual programming languages and extended to the graphical programming environments:
 - LabWindows / CVI
 - LabVIEW
 - TPL (using project selected carrier language)



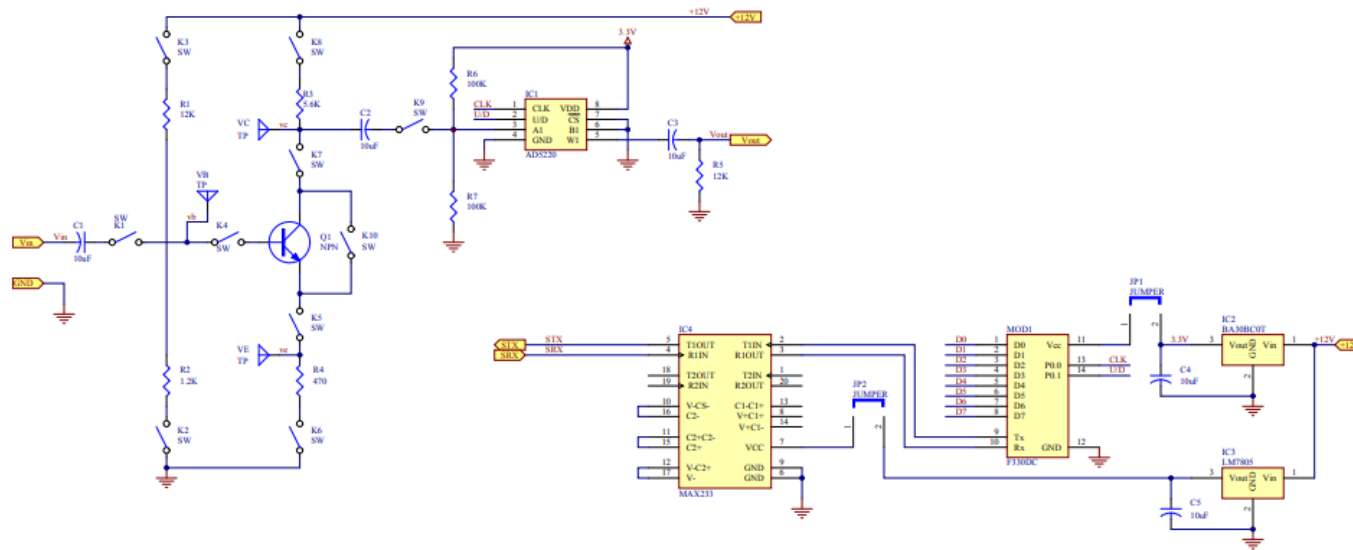
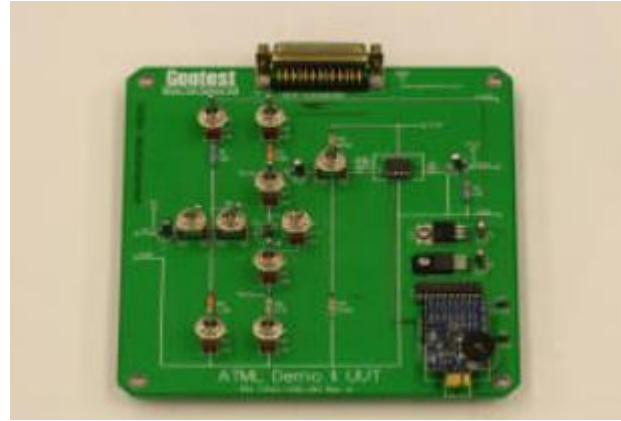


ATML UUT DESCRIPTION



SPHEREA

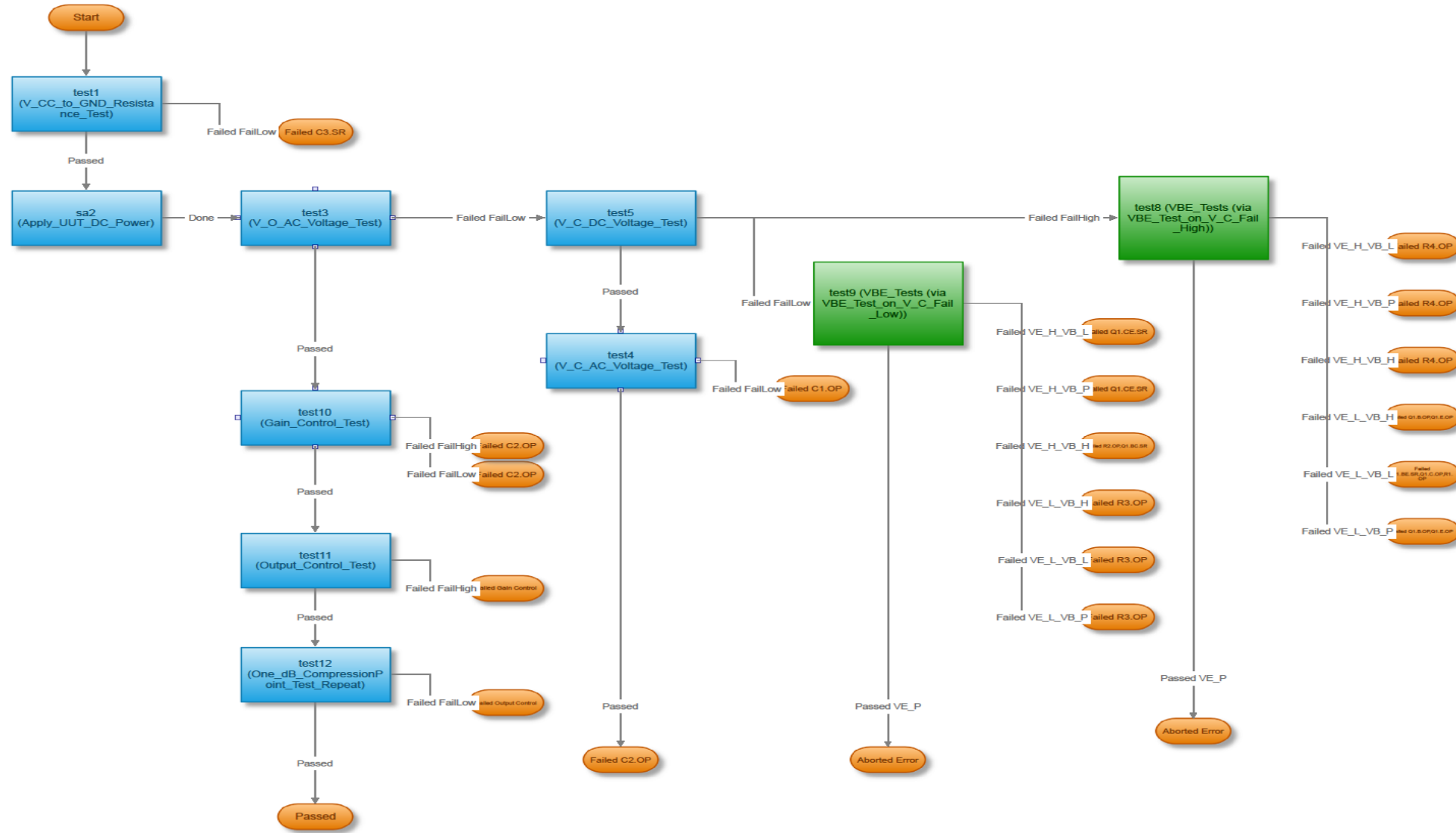
ATML TEST DESCRIPTION





ATML TEST DESCRIPTION

ATML TEST DESCRIPTION

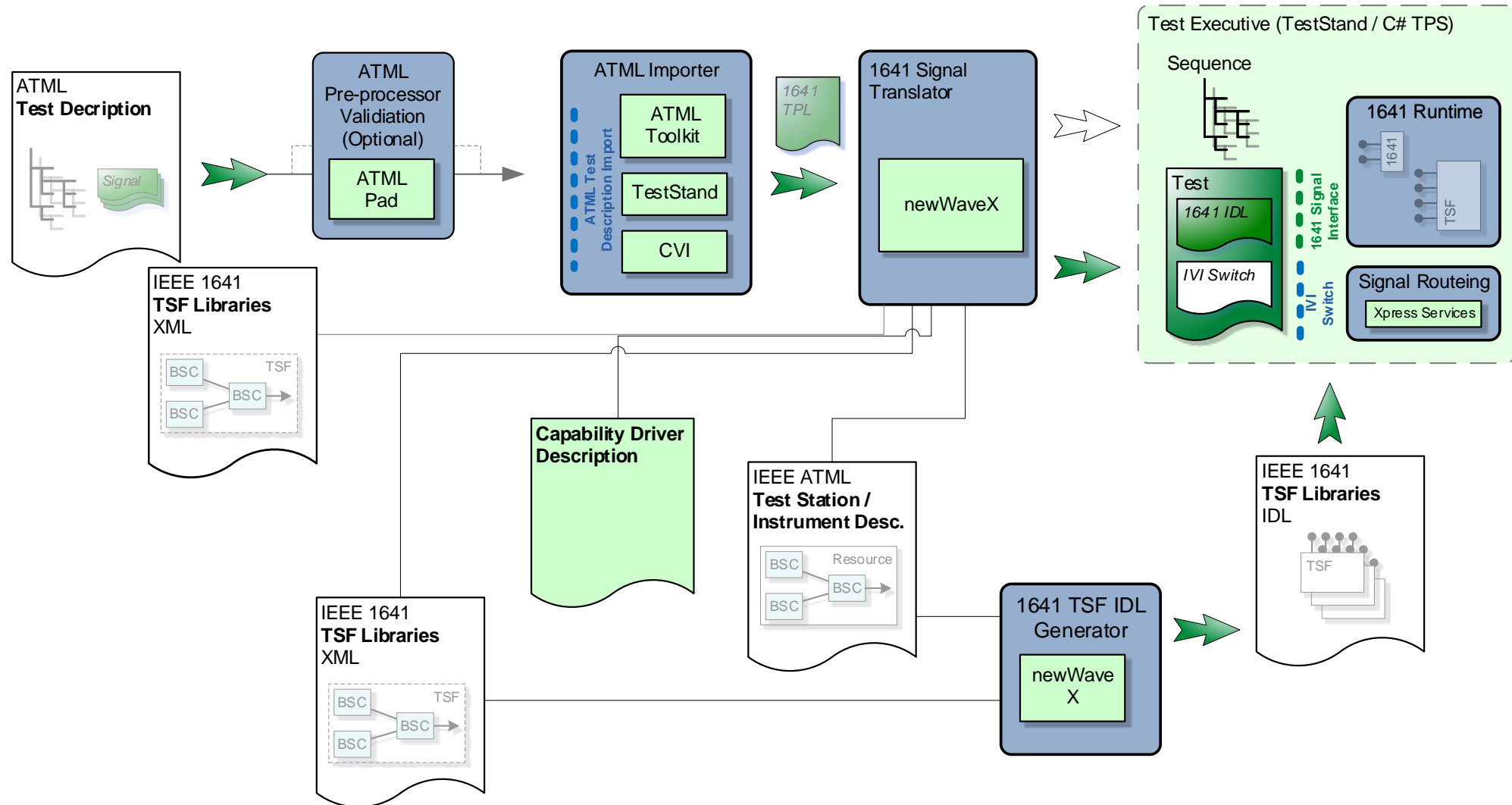




OSA-RTS DEMONSTRATION

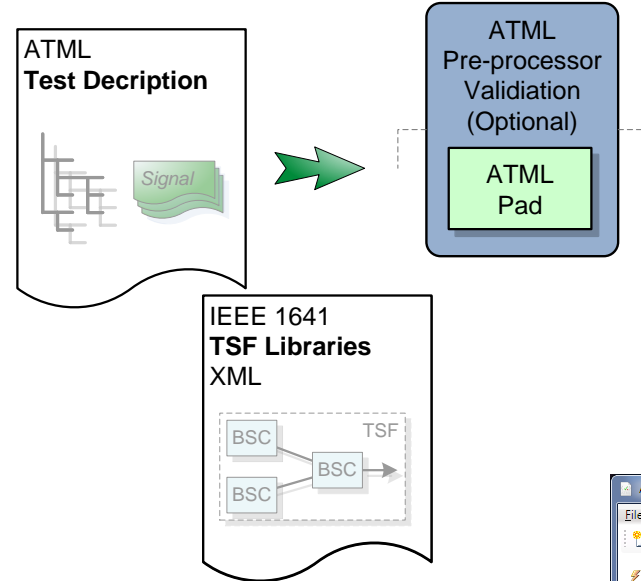
OSA-RTS DEMONSTRATION

COMPONENTS AND FLOW - LABWINDOWS / CVI ENVIRONMENTS

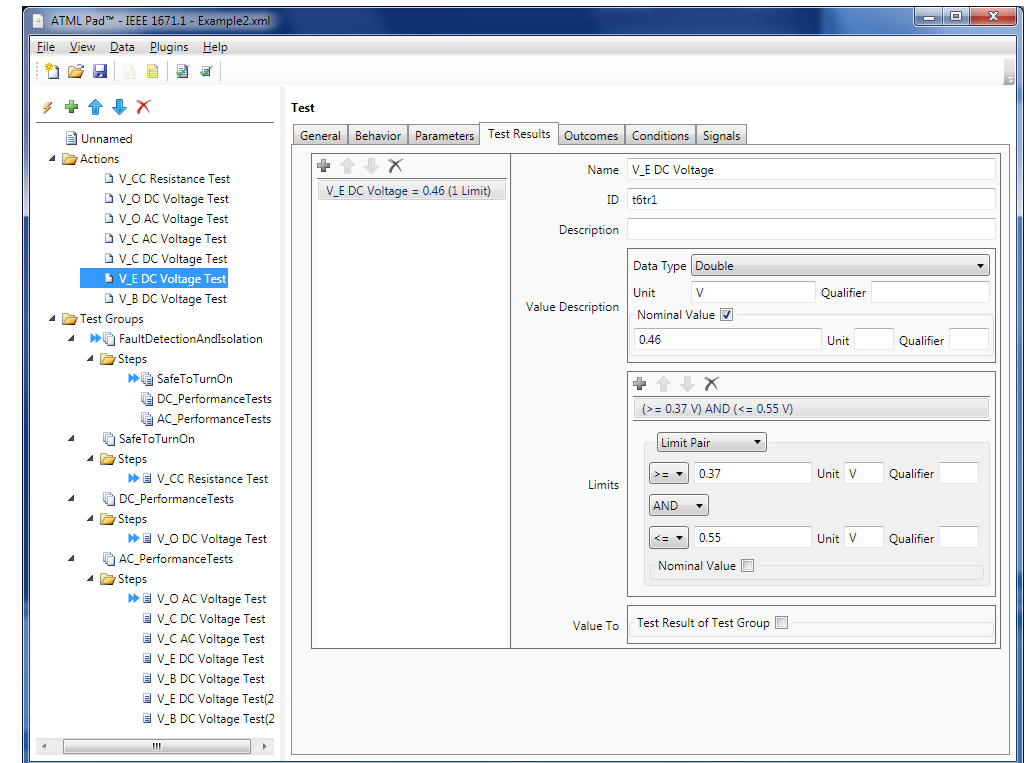


OSA-RTS DEMONSTRATION

COMPONENT – ATML PAD

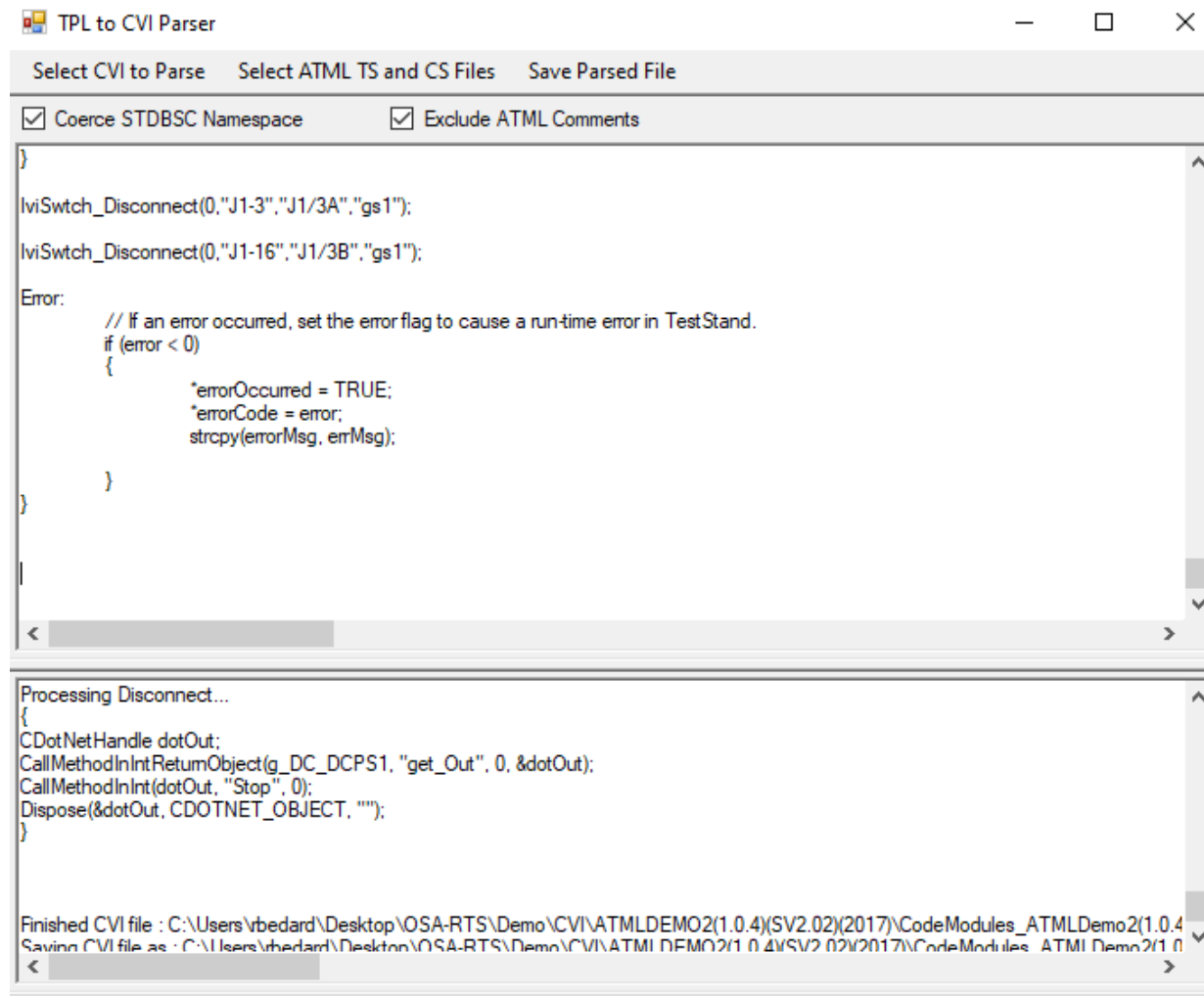
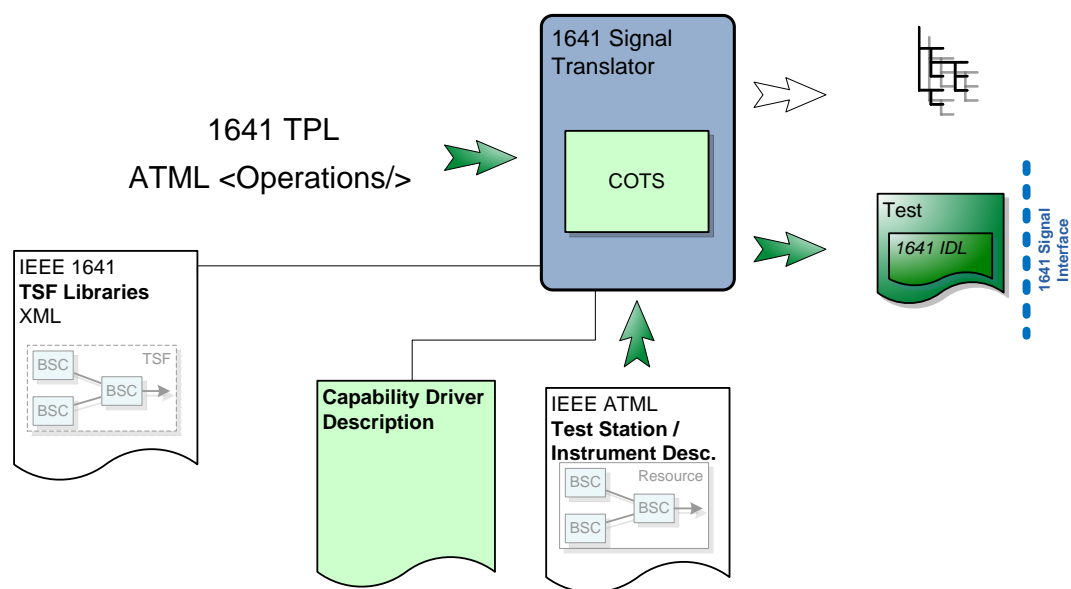


- Visual editor for ATML
- **Comprehensive ATML data validation**
- Integrated with TestStand ATML Translator
- Plug-in importer architecture
 - Conversion to standard ATML format



OSA-RTS DEMONSTRATION

COMPONENT – 1641 SIGNAL TRANSLATOR



Test Station Description

- 1.The Test Station Description is an XML file with associated schema (IEEE 1671.6) , that is used to describe the Test Resources and their Capabilities for an ATE.
- 2.The OSA-RTS uses the Test Station Description to assign/allocate test resource capabilities to test signals ATML operations.

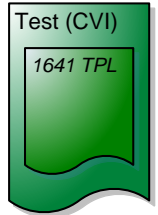
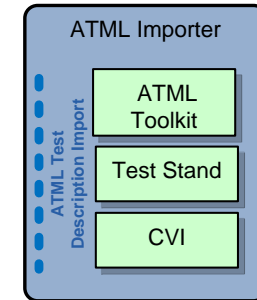
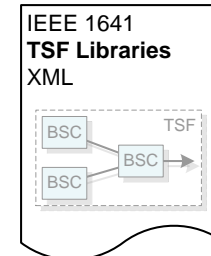
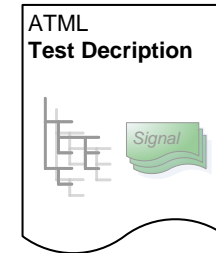
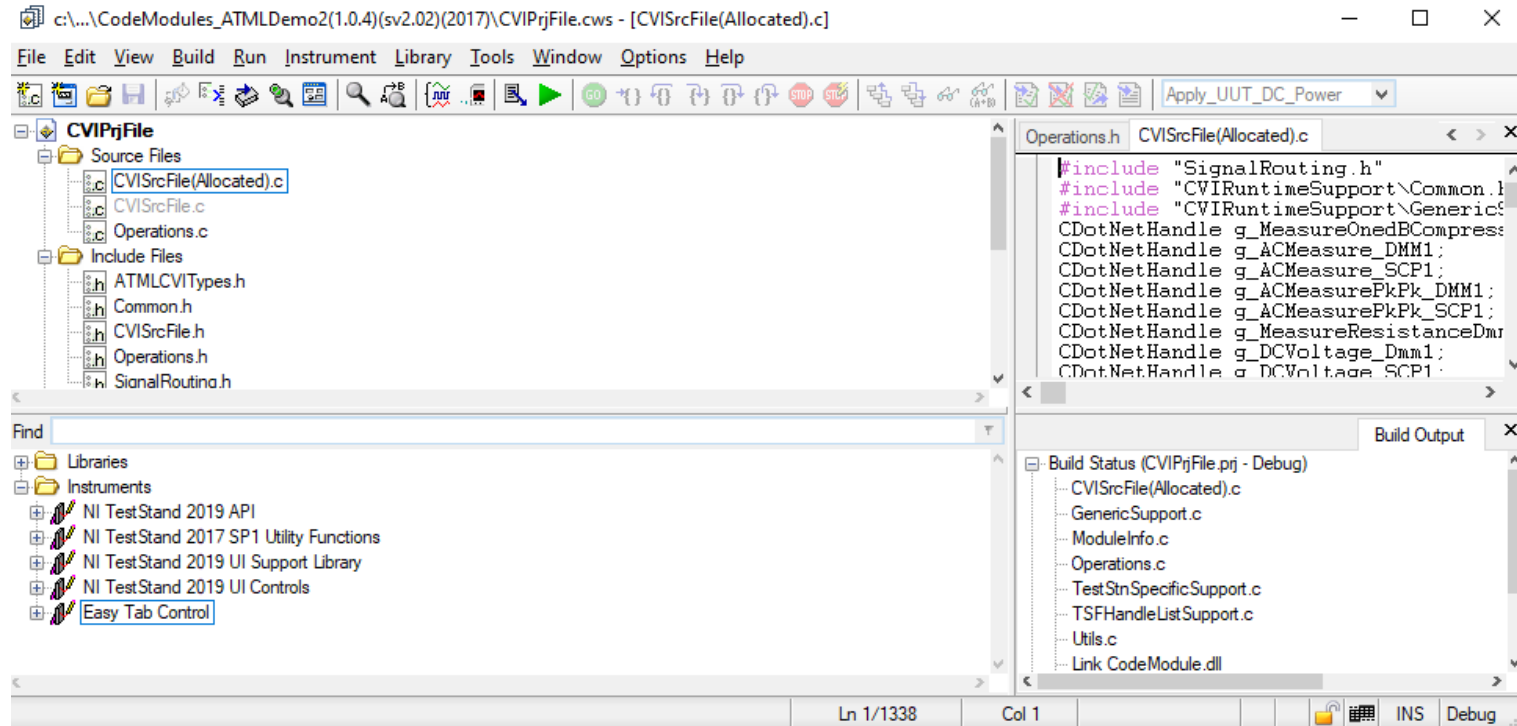
Capability Driver Description

- 1.The Capability Driver Description is an XML file with associated schema, that is used to generate Template Driver Code calls to the runtime system.
- 2.In the OSA-RTS ATML example, the Template Driver Code is targeted specifically to LabWindows/CVI, but is also utilised by the TPL demonstration.
- 3.The template code is inserted into the CVISrcFile.c by the 1641 Signal Translator.
- 4.The Capability Driver Description file is currently generated manually.



OSA-RTS DEMONSTRATION

COMPONENT – ATML IMPORTER (LABWINDOWS/CVI)



- Proven ANSI C development environment for test and measurement for more than 20 years.
- Provides C carrier language and access to driver code
- Hardware configuration assistants, built-in measurement libraries, comprehensive debugging tools, interactive execution capabilities used during design along with advanced analysis and scientific user interface tools.
- Used for high performance applications in military, aerospace, telecommunications and automotive industries.



OSA-RTS DEMONSTRATION

ATML SEQUENCE EDITOR

The screenshot displays the NI TestStand - Sequence Editor [Edit] window. The main workspace shows a sequence titled "Single Pass - ATMLDemo2(1.0.4)(sv2.02)(2017).seq". The sequence is organized into steps: "Setup (0)" and "Main (11)". The "Main" group contains several test steps, including "test1" through "test12". The "test3" step is currently selected, and its settings are displayed in the "Step Settings for test3" panel at the bottom. This panel includes tabs for "Properties", "Module", "Limits", and "Data Source". The "Limits" tab is active, showing "On Condition True" and "On Condition False" settings, both set to "Goto step".

The left sidebar shows "Sequence Files (1)" with "ATMLDemo2(1.0.4)..." and "Executions (1)" with "Single Pass - ATML...". The right sidebar shows "Sequences" with "MainSequence" and "Variables" with "Locals ('FaultDetectionAndIsol...')". The "Variables" section lists several variables, including "ResultList", "TestGroupOutcomes", "AdditionalResultsVars", "V_CC_to_GND_Resistance_T...", and "V_O_AC_Voltage_Test_Test...", each with a value of "IND".

The bottom status bar indicates the user is "administrator", the environment is "<Global>", the model is "SequentialModel.seq", 1 step is selected (3), and the number of steps is 12.





OSA-RTS DEMONSTRATION– RESULTS

17 OSA-RTS DEMONSTRATION– RESULTS

C:\Users\rbedard\Desktop\OSA-RTS\Demo\CVI\ATMLDEMO2(1.0.4)(SV2.02)(2017)\Ten

Search...

Report

UIT Report

Station ID	STL_WINDOWS10
Serial Number	NONE
Date	17 March 2021
Time	13:22:29
Operator	administrator
Execution Time	1.67896 seconds
Number of Results	9
UIT Result	Passed

Expand / Collapse MainSequence

Begin Sequence: MainSequence
(C:\Users\rbedard\Desktop\OSA-RTS\Demo\CVI\ATMLDEMO2(1.0.4)(SV2.02)(2017)\ATMLDemo2(1.0.4)(sv2.02)(2017).seq)

Step	Status	Measurement	Units	Limits			
				Nominal Value	Low Limit	High Limit	Comparison Type
SequenceCall	Passed						

Begin Sequence: FaultDetectionAndIsolation
(C:\Users\rbedard\Desktop\OSA-RTS\Demo\CVI\ATMLDEMO2(1.0.4)(SV2.02)(2017)\ATMLDemo2(1.0.4)(sv2.02)(2017).seq)

Step	Status	Measurement	Units	Limits			
				Nominal Value	Low Limit	High Limit	Comparison Type

OSA-RTS DEMONSTRATION

COTS SOFTWARE

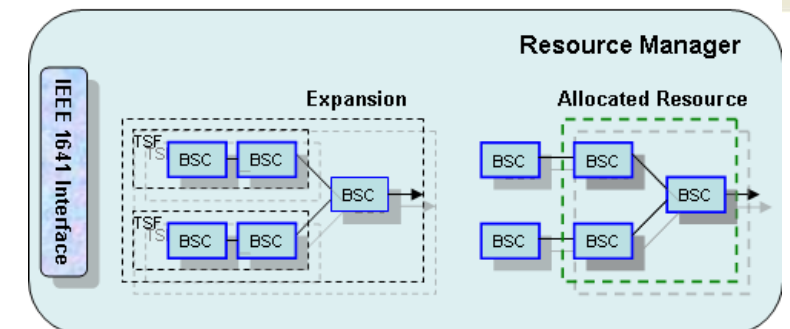
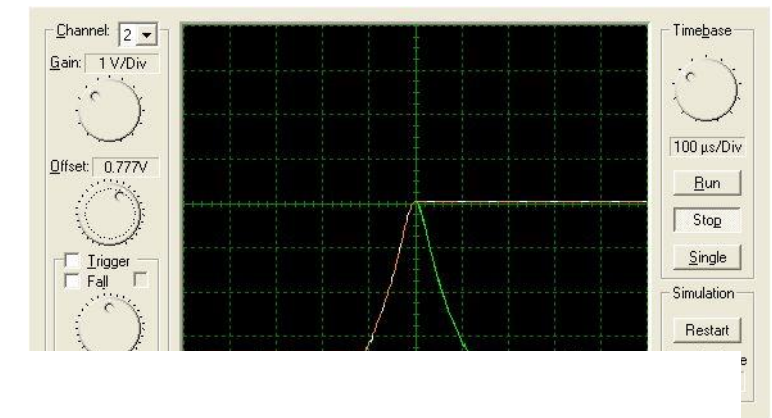
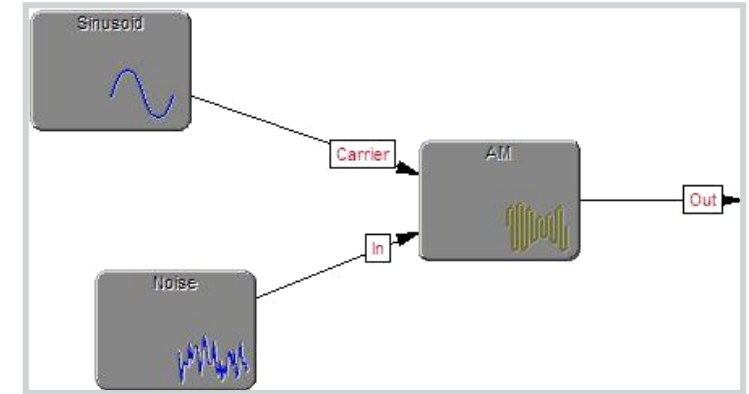
newWaveX® IEEE 1641™ Signal-based T&M software tools:

newWaveX SD (Signal Development)

- Complete graphical signal modelling & simulation environment .
- Compliant with IEEE 1641 and IEEE 1671 standards.
- Supports the creation and editing of IEEE 1641 Signals & TSF libraries; XML, XSD, IDL and HTML file formats for storage, interface specification and documentation.
- ActiveX controls enable easy embedding into third-party applications.

newWaveX PD (Platform Development)

- Test platform integration toolset, targeted at getting ATML test signals to real test pins.
- IEEE Std.1671 ATML Instrument and Test Station Description resource (instrument) description and validation environment.
- Compile-time resource manager/translator using IEEE 1641 IDL and TPL signal orientated test program descriptions to generate IEEE 1671 ATML Test Description. driver orientated test code.



The logo graphic features a central white circle containing the word "SPHEREA" in blue. This circle is surrounded by a complex network of thin white lines connecting various points, creating a web-like or molecular structure. The entire graphic is set against a solid grey rectangular background. Two thick blue horizontal lines intersect the central circle: one extends to the left and the other to the right.

SPHEREA

FOCUSED
ON
YOUR
CRITICAL
SYSTEMS



SPHEREA