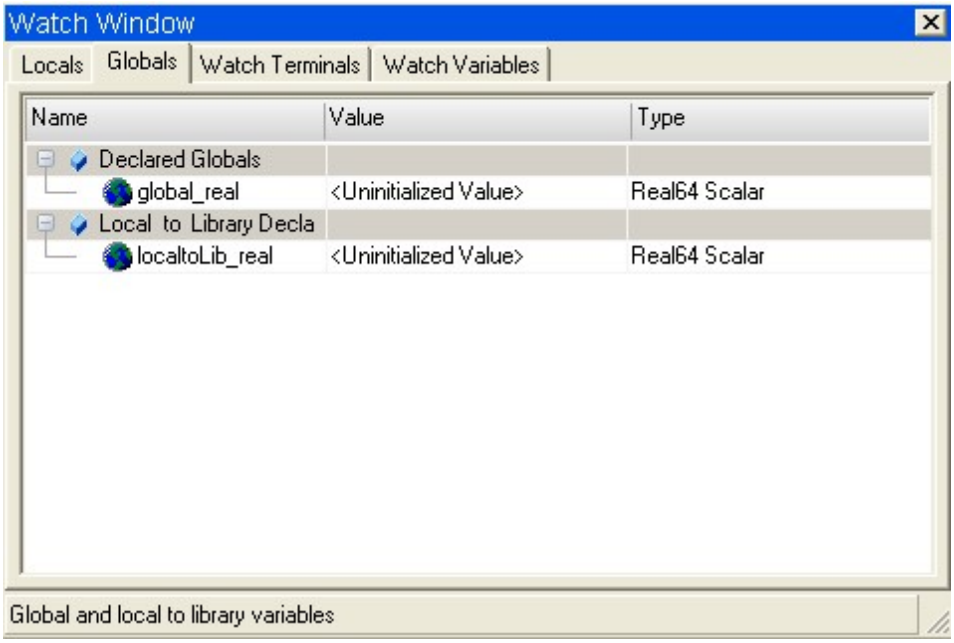
Agilent VEE Pro 8.0 New Features

Watch Window

Watch Window allows the user to view **and edit** values of variables and terminals when debugging. The program can **continue execution** incorporating any changed values.

When you click button on Toolbar, or select `View⇒Watch Window`, the Watch Window dialog box appears as follows.



See Watch Window for more information.

Examples

Datatype.vee, Globals.vee, Terminals.vee

Code Completion and Code Insight

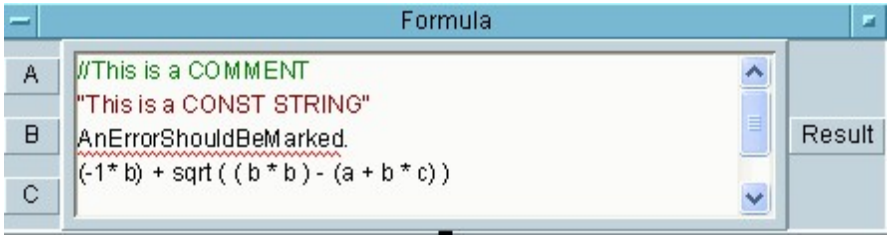
Code Completion and Code Insight greatly benefits any user who writes formula objects by reducing keyboard inputs and the need for memorization and external documentation. You can stay in your context, find the information you need, insert language elements directly into your formula, and even have Agilent VEE complete your typing for you. See Code Completion and Code Insight for more information.

Color Syntaxing

1. Comments are marked Green, Constant Strings are marked Dark Red and keywords are marked Blue.

2. Errors in a formula are marked by red wave lines.

3. Brackets are marked by grey frames.



Objects Supported by Code Completion and Code Insight

	Objects Supported
Code Completion	• .NET objects • Named VEE Objects • COM objects • Built-in Constants • Built-in Functions • Records
Code Insight	• Member functions of .NET and COM objects • Local UserFunctions • Imported UserFunctions • Built-in Functions • Imported Remote Functions • Imported Compiled Functions

Programmatic Properties

Programmatic properties helps the user to create better GUI faster. It allows users to GET/SET properties of VEE Objects, .NET objects, and COM objects at runtime. See ProgrammaticPropertyDemo.vee for a quick demo of this powerful new feature.

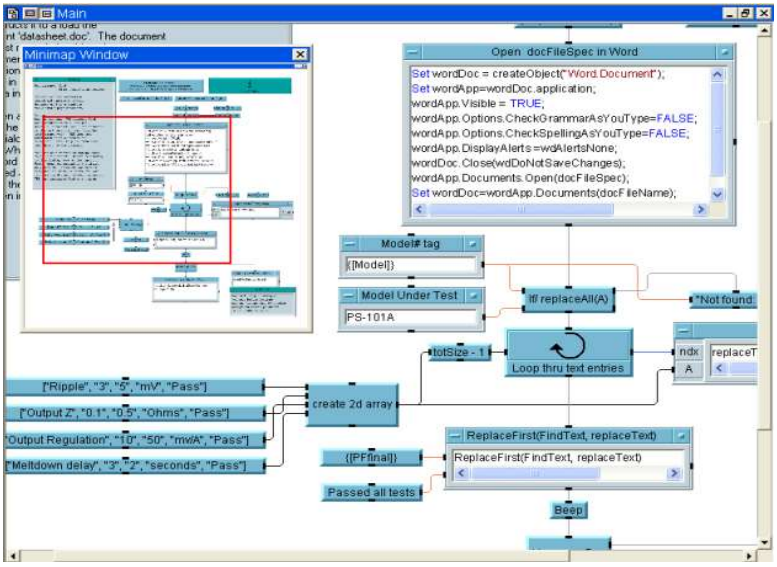
The following table shows properties that can be SET/GET programmatically. See To Change Properties Programmatically and To Change Object's Name and Scope for more detail information

Example

ProgrammaticPropertyDemo.vee DemoTabIndexChangeDemo.vee

Minimap

Minimap is an outline map of the entire detail view with a red rectangle box indicating the visible portion. To open the Minimap, click button on Toolbar or choose `View` ⇒ `Minimap`. An example of Minimap is shown in the following figure.



The red rectangle shows the relative location of the visible area in the entire detail view. Just one click on the Minimap, you can quickly jump to another location in the detail view. See Minimap for more detail information.

Home button

Agilent VEE 8.0 adds a new Toolbar button Home  , which moves the upper left corner of a program to the upper left corner of the context (Main, UserFunctions, or UserObjects).

New Execution Mode and Data Types

Beginning with version 8.0, Agilent VEE supports two new data types - Int64 and Boolean and a new Execution Mode - VEE 8.

Although the user can use TRUE and FALSE as constants since version 5.0, TRUE and False are not real Boolean constants. They are of Int32 type. From Agilent VEE 8.0, the two constants will be of real Boolean type. The supported logical operations in Agilent VEE 8.0 are AND, OR, NOT, XOR, ==, and !=. Agilent VEE 8.0 also supports Boolean in Compiled Functions. The user can use VEE_BOOL as the return type and the parameter type of a Complied Function. VEE_BOOL is treated as Boolean. See Boolean for more information.

New menu items and built-in functions added for Boolean:

- Data => Constant => Boolean
- Data => Constant => Boolean Array
- Data => Alloc Array => Boolean
- asBoolean(x)

Int64 has the longest precision for representing an integer. Agilent VEE provides two built-in numeric constants to represent the maximum and minimum values of int64: MaxInt64 and MinInt64. Constants in different Execution Modes will be explained as different types. See Int64 for more information.

New menu items and built-in functions added for Int64:

- `Data => Constant => Int64`
- `Data => Constant => Int64 Array`
- `Data => Alloc Array => Int64`
- `asInt64(x)`

Standardize on VISA Style Devices

Phase out older inconsistent I/O devices (mixed SICL & VISA) for a more uniform approach (VISA) when declaring/using I/O devices. Backward compatibility is maintained, even though users are "encouraged" to use new-style devices. See here for detail information.

Display Multiple Traces on Graph Objects through a Single Input Pin

This feature allows the user to display multiple traces (an array of traces) with the Agilent VEE Graph objects without knowing how many traces there will be ahead of time.

A new Boolean Graph property is added called 'MatrixInput' in detail view properties. When this MatrixInput property is set to True, the Agilent VEE Graph object would accept a 2D Array (up to 12 rows) as Input data and display multiple traces simultaneously. The Data container comes into a graph on a single input pin. The graph figures how many traces are contained there (up to 12 rows), shows the appropriate number of trace legends, and plots their points (columns). This new property CANNOT be toggled at runtime programmatically. The user must know when they are building their Agilent VEE program whether they need this new-style graph.

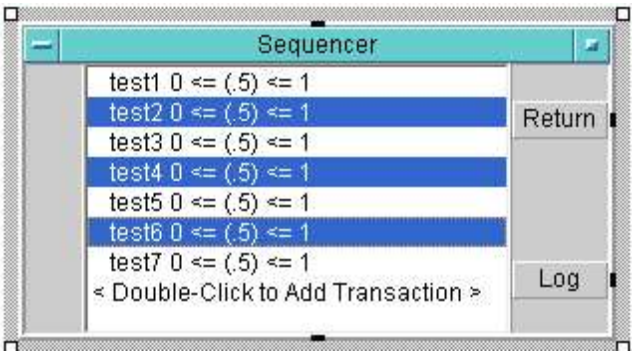
For detail information, please see example program 2dXyTrace.vee, MatrixInputStripChart.vee.

Multiple Transaction Enhancements

In Agilent VEE 8.0, rich new features have been added for all transaction-based objects (e.g., Direct I/O objects, To/From objects), especially supporting operations on multiple transactions.

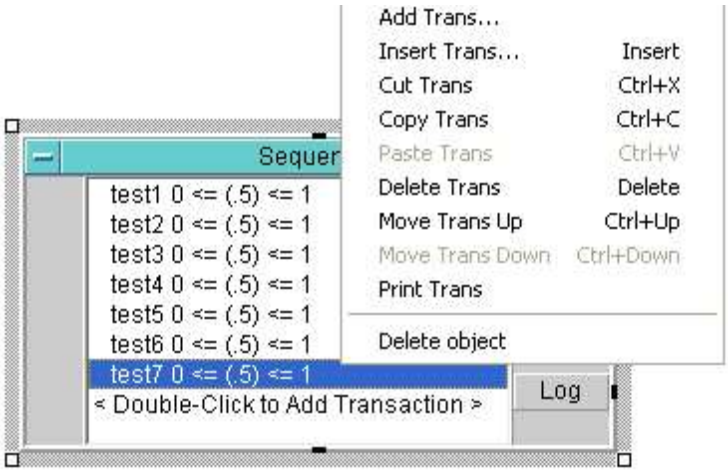
Major enhancements include:

* Arbitrarily select, delete, copy, and paste **multiple** transactions



* **Undo/Redo** Add/ Insert/ Delete/ Cut/ Paste/ Edit/ Move up/ Move down actions

* **All Windows-standard shortcuts**



CTRL+X --- Cut the selected transaction(s) to the "cut-and-paste" buffer

CTRL+C --- Copy the selected transaction(s) to the "cut-and-paste" buffer

CTRL+V --- Paste transaction(s) at the pointer location

Delete --- Delete the selected item(s) in the list

Insert --- Insert a transaction before current selected item

CTRL+Z --- Undo last operation

CTRL+Y --- Redo last operation

CTRL+Up --- Move the selected transaction up (only for single-transaction)

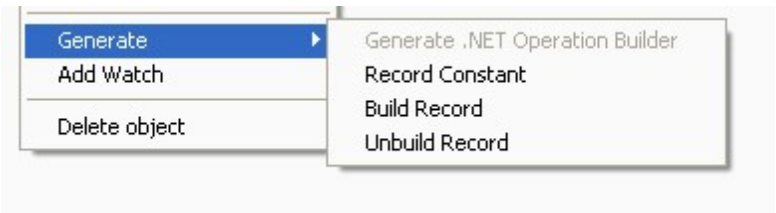
CTRL+Down --- Move the selected transaction down (only for single-transaction)

CTRL+ LeftButtons --- Select multiple transactions

Record Usability Enhancement

Agilent VEE 8.0 enhances Record usability in three aspects:

1. Declare Variable now has a Generate context menu for Record data type. The user can generate Record Constant objects, Build Record objects, and Unbuild Record objects.



2. Record Constant object now has a new Generate context menu for Record data type. The user can generate Declare Variable objects or Unbuild Record objects.

3. Added a new Built-in Function: buildRecord (fieldNameTextArray, field1, field2, fieldN)

The user can use buildRecord() to build a record whose field names and values are not known until runtime. The first parameter is an array of strings for the field names. The following parameters are values for each field, and the number of these parameters must match that array length. buildRecord() returns a scalar record with the specified field names and field values. Two examples are as follows:

buildRecord(fieldNameList2Long, field1, field2);

builldRecord(fieldNameList8Long, field1, field2, field3... field8);

See buildRecord() for more information.

NIDAQ Support Updated to Include NIDAQmx Drivers

Agilent VEE 8.0 provides support for new NI's Data Acquisition driver library NIDAQmx. This support includes access to all of the functions in the library and online help for each function. Instruments Manager can find instruments with NIDAQmx drivers automatically.

Allow Scrolling in Panel View

ScrollBars can be set to automatically appear when your panel view is not large enough to display all objects. This feature can be turned on and off by changing the Panel property named "ScrollbarsEnabled". The default is off. See here for detail information.

Instrument Samples

Added 16 new instrument samples in examples\instrumentIO\InstrumentManagerIntegrated.

Updated many Instrument samples.

See Also

New Features and Enhancements in Past VEE Versions, What's Been Fixed in this Release

What has been Fixed in Version 8.0

ID	Descriptions	Broken in
27961	VSE: Junction object passes NULL when it should not have fired. If it had inferred as non-nil, VSE in downstream expression.	7.52
28140	VEE applications will enter to infinite loop if DropDownList items are changed.	7.52
28234	VSE when deleting instruments in Instrument Manager.	7.52
28141	Disabled DropDownLists can be controlled by users.	7.52
27672	VSE:savePanelImage throws a VSE when the input parameter number is not 3.	7.52
28508	Sample Code Error: Able to detect unplugged device.	7.52
28110	Cannot load UFs which are named in Japanese Character.	7.52
28362	VSE when double clicking on the control input pin - "scales" of XYTrace objects.	7.52
27997	In the dynamic IO Active X control - the USB interface appears as unknown.	7.52
28118	VEE should automatically call Dispose on .NET objects when programs stop.	7.52
28479	Examples: Games\Starveego\network's outputs mismatch.	7.52
28225	Pops up error 401 when creating event handler for .NET controls.	7.52
28278	Vee HANG when editing text array.	7.52
28130	Cannot use escape character in strings in .NET operation builder.	7.52
28151	Multiple selecting and deleting Record Field Data causes vee to hang	7.52
28107	Cannot get right and full file name by using GetFile(path) in system menu in japanese OS.	7.52
27776	USB instruments time out after x number of runs.	7.52
27871	NI DAQ driver won't import into Toolkit Driver Session wizard.	7.52
27811	Infinite Loop during opening a file with embedded IO.	7.52
28087	Text in the list box gets reformated when moving the box.	7.52
28285	Duplicate variables appear on Program Explorer.	7.52
28235	Pops up "unexpected error" when clicking "Abort" in "adding instrument" dialog box.	7.52
28204	Changing the address of an Instrument via formula to 0 does not make it act "live mode off".	7.52
28187	Should not generate terminal names automatically as Result.	7.52
28295	VSE when we work with Coord data type in the record constant.	7.52
28155	Concatenator fail to combine two or more different int type constants.	7.52
27702	VEE online help->Welcome->Example Programs->missing instrument samples.	7.52
28089	No prompt when closing VEE after changing type of Declared variables.	7.52
28311	DExplore still live after VEE exits.	7.52
28049	Annoying behavior of "Declare Variable" & Real64.	7.52
28158	Input pins in the DateTime.Compare object do not match the formula.	7.52
27665	VSE using NIDAQ SCAN_Start() functions that assume async / buffered data.	7.51
28457	PageUp causes problems in FOB.	7.51
28379	VSE when showPanel/hidePanel on RPC Functions or DLL Functions.	7.51
27293	.NET Op Builder's type checking during editing needs to be relaxed.	7.51
27179	COM type conversion doesn't utilize QueryInterface.	7.51
27668	Error 514 "Numeric overflow in function Regression".	7.51
27696	IVI-COM object becomes System.__ComObject after a number of iterations.	7.51
27574	VEE fails to find IVI-COM driver automatically if driver prefix does not match SoftwareModuleName.	7.51
27135	NIDAQ: VEE doesn't handle overlapping, NIMAX-assigned device addresses...	7.51
27438	Description Indicator cannot be cleared.	7.51
27126	IVI-COM examples have extraneous instrument references.	7.51

27650	Interface duplicated when add USB or TCPIP instruments.	7.51
28268	VSE: mod zero at iopath.m when reading text and the dimSizeBlock is zero.	7.5
28200	Vee Caution appears when importing library that consists of .net form control.	7.5
27635	NIDAQ objects don't copy/paste well.	7.5
27674	Online Help for LockPosition refers to Lock Panel Position property which has been changed.	7.5
23402	Vxipnp & DllFunc do not truly support UInt8 (gets converted to Int16 coming back out).	7.0
23296	DynamicFindRemoteInstruments.vee finds only devices connected to GPIB interface, not LAN interface.	7.0
28333	VSE Print program when device name is longer than 200 at contextView.m.	7.0
27684	VSE when a VEE popup panel has focus, a .NET Dialog pops up, and program stops - kbdFocusView = freed id from popupPanel	7.0
27990	VSE on exit of VEE with selected XY trace on panel when XY trace is added to panel after XY is executed.	7.0
27889	VSE de-selecting an object that errored during selection, eg a Picture object pointing to an illegal bmp / jpg.	7.0
27571	Changes made to your I/O config via ACE will not be seen by VEE until you exit/restsrt VEE.	7.0
28421	Vee display improper IO error message.	7.0
26948	.NET changes the behaviour of VEE floating point error handling.	7.0
28378	Lack of SRQ (RQS) for TCPIP and USB instruments.	7.0
27770	Undo of Cut of a UO without its parent Context visible shows wrong values in PropGrid.	7.0
23994	Problems when attempting to edit Value Constraint Field on Real64 Input and Int32 Input objects.	7.0
27656	VSE loading corrupt save file 'Cannot create views for component' parsing viewFor/devCarrierFor dd with no NPort devId 'dd'.	7.0
28079	Double-clicking on an iconized PCall that is in a UO (not in a UF) writes a minidump file.	7.0
28030	Duplicated type(int16) in Record field attributes.	6.2
28097	VSE when GPIB gateway hostname is longer than 32 characters in vee.io file.	6.0
27998	Clicking on the Call user function object in one lib jumps to the wrong lib.	6.0
27494	VSE right button context menu on an object on a runtime popup panel can send MENUPICKEVENT after that object is free.	6.0
27596	Logical Or of UInt8 data array gives wrong answer (sometimes!).	6.0
27463	File->Create Runtime Version should be greyed out when program is running or paused.	6.0
27838	VSE on UserObject -> "Make UserFunction" when UO name isValidName: true but is duplicate name in NameSpace.	5.0
27687	VSE Internal 'compareValues not defined for this type' on sort() on rec of rec of array.	5.0
27729	VSE PopupPanel does not recognize selectList when F1 is pressed with a PopupPanel up in Pause state.	5.0
27799	VSE on interactive delete of a UO with a sub-UO with a Global-Scope DeclVar in it.	4.0
27683	VSE on veerun exit, freeing UO with sub-UO with DeclVar global scope.	4.0
28411	Memory leak in file IODevCreate.m.	4.0
27544	Veesm will not connect if hostname starts with a number not a letter.	3.0

27573	Sequencer variable "thisTest" not available in EnabledIf expression (documentation says it is), unless, you open and Ok trans.	3.0
27608	VSE on Raise Error with error code 950-999. Should give little error "don't do this" not VSE	3.0

VSE: VEE Serious Error