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Date: March 14 2014
Subject: Vector (HSL) Library Integration

(1) Integration of a 3rd party device (or software) using a HSL library

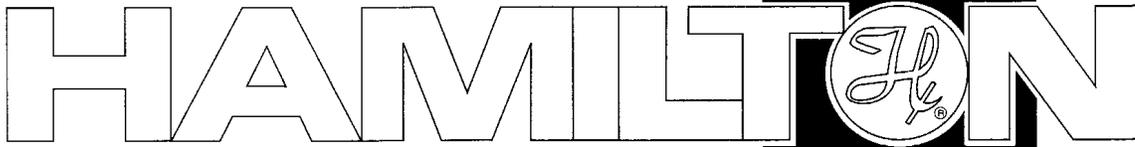
The Vector supports the integration of 3rd party software using software automation (COM). COM is the basis for OLE, ActiveX, COM+ and DCOM (Microsoft technologies). Using the Hamilton HSL Method Editor you can write a HSL (Hamilton Standard Language) Library that interfaces to the COM component.

To write a COM wrapper/driver using C#:

- Select the target platform as x86
- Create a class library interface
- Make the project 'COM-Visible'
- Create an interface definition
 - Add methods as required
 - Use automation types (variant compatible types)
 - Add a GUID to the interface (attribute)
- Create a separate interface for any events (optional event interface for object)
 - Add a GUID to the interface (attribute)
 - Declare as IDispatch (attribute)
 - Add a DispId for each event
- Declare your class as public
 - Derive from the interface definition
 - Add a public constructor with no parameters
 - Add the attributes:
 - ProgId
 - Guid
 - To implement events, ComSourceInterfaces
 - Implement the interface methods
- Finally, expose your object (with interfaces via COM)
 - Register your assembly using 'regasm /tlb <assembly name>'

C# code sample





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```
[GuidAttribute("F02C0FA4-dBC8-457b-88D1-31AD24C1C399")]  
[InterfaceType(ComInterfaceType.InterfaceIsIDispatch)]  
public interface IHxDriverEvents  
{  
    [DispId(1)] void ValueChanged();  
}  
  
[GuidAttribute("F02C0FA4-dBC8-457b-88D1-31AD5671C399")]  
public interface _IHxDriver  
{  
    int SetValue(string value);  
    int GetValue(ref string value);  
}  
  
public delegate void ValueChangedEvt();  
  
[ProgId("Driver1.MyDriver")]  
[Guid("12E49563-FD68-4589-A52F-6D66B30EFD13")]  
[ComSourceInterfaces(typeof(IHxDriverEvents))]  
[ClassInterface(ClassInterfaceType.None)]  
public class MyDriver : _IHxDriver  
{
```

Recommended Implementation Details

C# Class Library Interface

- Do not throw exceptions, instead use a return code (0=success)
- Provide a GetLastError() method
- Provide a GetErrorString(int code) method; provide meaningful error descriptions

HSL Library Interface

- Provide a very slim wrapper for the C# interface
- Do not attempt to add error recovery logic; return error codes to the method
- Refer to the (HSL Method Editor) on-line help for writing HSL libraries