Technical Solutions
Apogee SDK with Labview – Getting started

Affected Products
  Apogee Aspen/Alta/Ascent
  Apogee SDK (document applicable for v5.5.16.3188)

The Apogee SDK provides access to all camera functions through an ActiveX/COM API. The driver resides in the file *Apogee.dll*. Apogee cameras are controlled through an interface referred to as the *ICamera2* interface.
The *ICamera2* interface includes various *Methods* and *Properties*. Generally speaking, a COM *Method* is a call made by the application to perform an action, such as taking an exposure. A COM *Property* is information obtained by the application about the camera system, such as the camera model number. The *ICamera2* interface is designed as a flexible and lightweight layer to access the underlying camera hardware.

IFilterWheel is a similar interface used to provide functionality for Apogee filter wheels

Providing the Apogee SDK has been correctly installed, the API can be loaded into Labview and used to control Apogee cameras and filter wheels.

ICamDiscover will need to be called first to search the PC USB bus and/or an Ethernet network for Apogee devices *ICamDiscover* is used to provide information for the *ICamera2::Init* and *IFilterWheel::Init* functions. The component contains two methods for device searching and selection. The first is a simple dialog box that assists a user's camera selection. It is a generic component designed to be quickly inserted into an application. The second is a property (*ListUsbDevices*) that provides a tagged string of Apogee USB devices attached to the host PC.

ICamera2, *IFilterWheel* and *ICamDiscover* can be accessed in Labview through creating an Automation Refnum on the Front Panel from *Controls >> Refnum >> Automation Refnum.*

For example:

Right click on the Automation Refnum and select *Select ActiveX Class >> Browse* and point the *Type Library* to *Apogee Camera Control Library.*
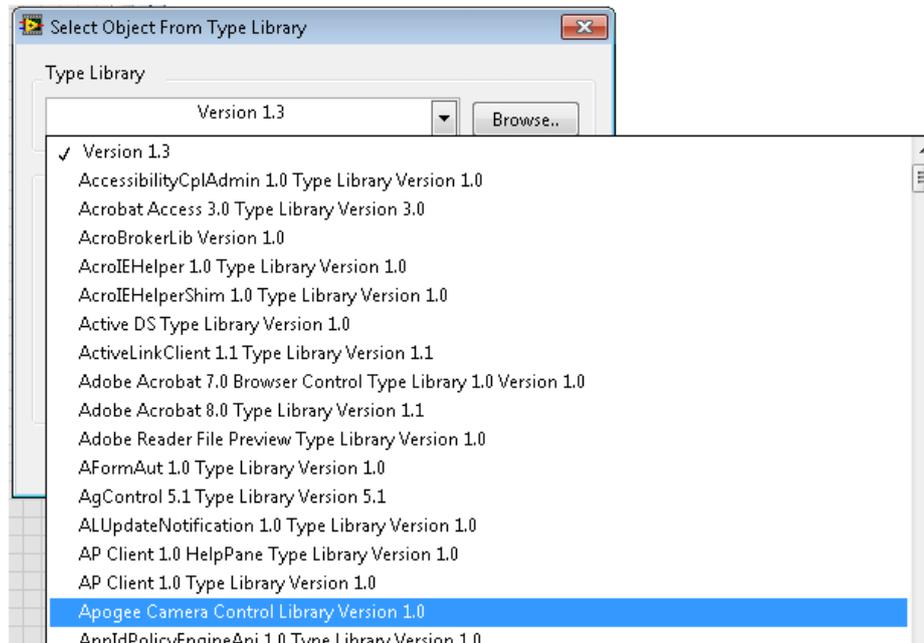
If *Apogee Camera Control Library* is not available from the drop down menu, browse to *C:\Program Files\Common Files\System* and select the *Apogee.dll.* Select *CamDiscover* to assign the library to this refnum.
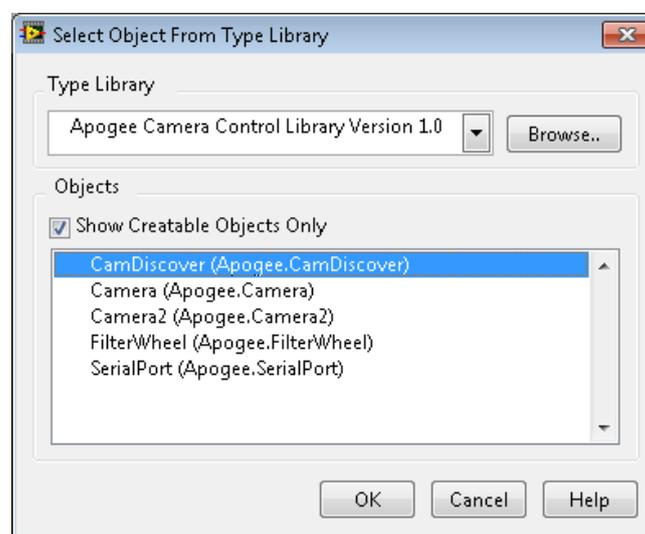
HINT: check the *'Show Creatable Objects Only'* box to list the usable libraries.

The Automation Refnum will now be assigned with the *CamDiscover* interface.

Open the Refnum using the Automation Open function on the Front Panel from *Functions >> Connectivity >> ActiveX >> Automation Open*

To read/write *Properties* and *Methods* from the interface, use Property and Invoke Nodes (respectively) on the VI Block Diagram, *Functions >> Application Control*
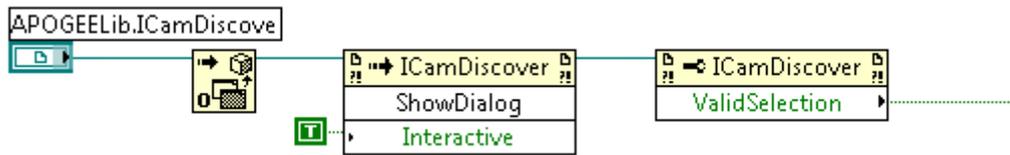
Steps shown above: *Open ICamDiscover >> ShowDialog Method to display dialogue box that allows user to query cameras communicating with the PC >> ValidSelection Property determines that a valid camera has been selected*

Repeat this example to open the *Camera2* or *FilterWheel* interfaces.

For example, *ICamera2*:
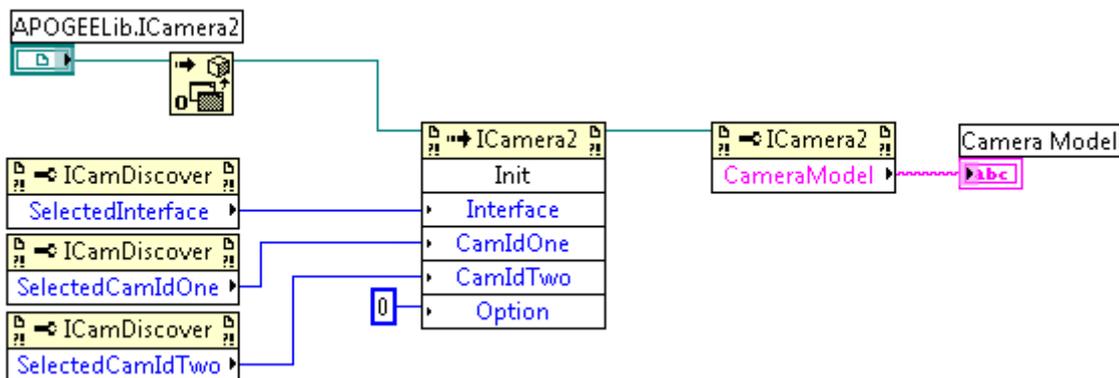
Steps shown: *Open ICamera2 >> Init Method to initialise camera >> ICamDiscover returns if camera is USB or Ethernet, first camera identifier (enumerator), second camera identifier (if applicable) >> CameraModel Property returns camera model number*

A full list of Apogee SDK functions can be found in the AltaDevApi.pdf document in the installation directory, default location:

C:\Program Files\Apogee\doc\AltaDevApi.pdf   (default location)

If you require any further assistance, please contact your local Andor Support Representative.