

Python Interface for Plugin SDK

NOTE

The plugin SDK documentation should always be referred to as that is the definitive reference documentation.

This document describes the differences between how a script is programmed in C/C++ and how it would be programmed in Python.

Some of the functions can be used the same as in C/C++, but this document shows all functions that are available in the PythonInterface plugin.

There are sections at the end of this document that explain the extra utility modules that I have added.

Notes

All scripts files must have the PI_ prefix in order for them to be loaded by the plugin. This distinguishes them from any other support scripts that you may be using.

Some of the functions require self to be passed in. Failure to do this will cause problems.

When registering callbacks you need to pass in a copy of the callback.

Example

```
self.DrawCB = self.DrawCallback
RetVal = XPLMRegisterDrawCallback(self, self.DrawCB, xplm_Phase_Airplanes, 0, 0)
Where "self. DrawCallback" is the actual callback.
```

```
RetVal = XPLMUnregisterDrawCallback(self, self.DrawCB, xplm_Phase_Airplanes, 0, 0)
```

*Always use the original copy of the callback when un-registering a callback.
In the example above the self.DrawCB variable has to be used*

```
def ExampleCallback (self,param1, param2 ,param3):
..
..
..
    return 1
```

It is a good idea to use the examples to get a feel for how plugins are programmed in Python.

Written by Sandy Barbour – 5th May, 2005

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Python Interface for Plugin SDK

Special Functions for the Native Paths Feature introduced in plugin SDK 2.10. (These functions are unique to the PythonInterface plugin)

The XPLM_USE_NATIVE_PATHS feature introduced in SDK 2.10 works on a per plugin basis, this means that a plugin can enable it and no other plugins are affected.

Because Python Scripts run inside the PythonInterface plugin this will not work as enabling XPLM_USE_NATIVE_PATHS in one script would affect all other scripts.

In order to get this to work on a per script basis new path functions have been introduced. The visible difference between these functions and the originals are that the first parameter has to be self and the functions have the _NP suffix added to them. Note, self is the ScriptID, the new functions use this to only enable natives paths for that script only.

This allows me to handle the paths for each script without affecting other scripts that do not want to use XPLM_USE_NATIVE_PATHS.

Below the surface these functions are different from the originals as they handle the whether the script is using XPLM_USE_NATIVE_PATHS or not and return the correct path accordingly.

I also did not want to modify the original functions as that would have broken a lot of existing scripts.

In the following pages the _NP functions will work as follows.

If the XPLM_USE_NATIVE_PATHS has been enabled for that script, then the paths returned will have the / delimiter.

If the XPLM_USE_NATIVE_PATHS has NOT been enabled then they will return the normal path for that OS, similar to the original non NP functions.

You can still use the original functions if your script has them, but if you want to use native paths, then you will have to use the new _NP functions.

In the new _NP functions the first parameter must be self.

If you are using them in a normal script function then use this as self is the ScriptID.

```
def PathTestLoopCallback(self, elapsedMe, elapsedSim, counter, refcon):  
    Path = XPLMGetSystemPath_NP(self)
```

If you are using them in your own functions use this format.

```
def GetSystemPath(self, ScriptID):  
    Path = XPLMGetSystemPath_NP(ScriptID)
```

Calling your function like this.

```
GetSystemPath(self)
```

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Python Interface for Plugin SDK

XPLMCamera Module

To use this module add the text below at the start of the PythonInterface script.

```
from XPLMCamera import *
```

```
XPLMControlCamera(self, inHowLong, CameraControlCallback, inRefcon)
```

Example

```
self.CameraCB = self.CameraCallback  
XPLMControlCamera(self, xplm_ControlCameraUntilViewChanges, self. CameraCB, 0)
```

```
XPLMDontControlCamera(self)
```

```
Val = XPLMIsCameraBeingControlled()  
Val1, Val2 = XPLMIsCameraBeingControlled()
```

Example 1

```
CameraControlData = XPLMIsCameraBeingControlled()  
IsCameraBeingControlled = CameraControlData[0]  
outCameraControlDuration = CameraControlData[1]
```

Example 2

```
IsCameraBeingControlled, CameraControlDuration = XPLMIsCameraBeingControlled()
```

```
XPLMReadCameraPosition(outCameraPosition)
```

See the plugin SDK documentation for the members of the CameraPosition structure.

Example

```
CameraPosition = []  
XPLMReadCameraPosition(CameraPosition)
```

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XPLMDataAccess Module

To use this module add the text below at the start of the PythonInterface script.

```
from XPLMDataAccess import *
```

DataRef = XPLMFindDataRef(DataRefString)

Example

```
NumberOfEnginesDR = XPLMFindDataRef( "sim/aircraft/engine/acf_num_engines")
```

CanWriteDataRef = XPLMCanWriteDataRef(DataRef)

Example

```
NumberOfEnginesDR = XPLMFindDataRef( "sim/aircraft/engine/acf_num_engines")  
IsWriteable = XPLMCanWriteDataRef(NumberOfEnginesDR)
```

DataRefTypes = XPLMGetDataRefTypes(DataRef)

Example

```
NumberOfEnginesDR = XPLMFindDataRef( "sim/aircraft/engine/acf_num_engines")  
TypeOfDataRef = XPLMGetDataRefTypes(NumberOfEnginesDR)
```

Value = XPLMGetDatai(DataRef)

Example

```
BatteryOnDR = XPLMFindDataRef( "sim/cockpit/electrical/battery_on")  
IsBatteryOn = XPLMGetDatai(BatteryOnDR)
```

XPLMSetDataai(DataRef, Value)

Example

```
BatteryOnDR = XPLMFindDataRef( "sim/cockpit/electrical/battery_on")  
XPLMSetDataai(BatteryOnDR, 1)
```

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Value = XPLMGetDataf(DataRef)

Example

```
CockpitLightsDR = XPLMFindDataRef( "sim/cockpit/electrical/cockpit_lights")
CockpitLightsLevel = XPLMGetDataf(CockpitLightsDR)
```

XPLMSetDataf(DataRef, Value)

Example

```
CockpitLightsDR = XPLMFindDataRef( "sim/cockpit/electrical/cockpit_lights")
XPLMSetDataf(CockpitLightsDR, 0.5)
```

Value = XPLMGetDatad(DataRef)

Example

```
LocalxDR = XPLMFindDataRef( "sim/flightmodel/position/local_x")
x = XPLMGetDatad(LocalxDR)
```

XPLMSetDatad(DataRef, Value)

Example

```
LocalxDR = XPLMFindDataRef( "sim/flightmodel/position/local_x")
XPLMSetDatad(LocalxDR, 100.12345)
```

Count = XPLMGetDatavi(DataRef, DataRefValues, Offset, Max)

Example 1

```
PropModeDR = XPLMFindDataRef( "sim/flightmodel/engine/ENGn_propmode")
Count = XPLMGetDatavi(PropModeDR, None, 0, 0)
```

Example 2

```
PropModeDR = XPLMFindDataRef( "sim/flightmodel/engine/ENGn_propmode")
PropModeList = []
Count = XPLMGetDatavf(ThrottleDR, PropModeList, 0, 2)
Throttle1 = PropModeList[0]
Throttle2 = PropModeList[1]
```

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XPLMSetDatavi(DataRef, DataRefValues, Offset, Max)

Example

```
PropModeList = [3,3]
PropModeDR = XPLMFindDataRef( "sim/flightmodel/engine/ENGX_propmode")
XPLMSetDatavi(PropModeDR, PropModeList, 0, 2)
```

Count = XPLMGetDatafv(DataRef, DataRefValues, Offset, Max)

Example 1

```
ThrottleDR = XPLMFindDataRef( "sim/flightmodel/engine/ENGX_thro")
Count = XPLMGetDatafv(ThrottleDR, None, 0, 0)
```

Example 2

```
ThrottleDR = XPLMFindDataRef( "sim/flightmodel/engine/ENGX_thro")
ThrottleList = []
Count = XPLMGetDatafv(ThrottleDR, ThrottleList, 0, 8)
Throttle1 = ThrottleList[0]
Throttle2 = ThrottleList[1]
```

XPLMSetDatafv(DataRef, DataRefValues, Offset, Max)

Example

```
ThrottleList = [1,1,1,1,1,1,1,1]
ThrottleDR = XPLMFindDataRef( "sim/flightmodel/engine/ENGX_thro")
XPLMSetDatafv(ThrottleDR, ThrottleList, 0, 8)
```

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Count = XPLMGetDataB(DataRef, DataRefValues, Offset, Max)
XPLMSetDataB(DataRef, DataRefValues, Offset, Max)

Example

```
TailNumberDR = XPLMFindDataRef("sim/aircraft/view/acf_tailnum")
ByteArray1 = []
Count = XPLMGetDataB(AccessorDataRef, TempByteArray1, 0, 40)
print TempByteArray1
print TempByteArray1[0]
TempByteArray2 = [49, 50, 51, 52, 53, 54, 55, 56, 57, 48]
XPLMSetDataB(AccessorDataRef, TempByteArray2, 0, 10)
TempByteArray3 = []
Count = XPLMGetDataB(AccessorDataRef, TempByteArray3, 0, 40)
print TempByteArray3
```

```
XPLMDataRef = XPLMRegisterDataAccessor(  
    self, inDataName, inDataType, inIsWritable,  
    inReadInt, inWriteInt,  
    inReadFloat, inWriteFloat,  
    inReadDouble, inWriteDouble,  
    inReadIntArray, inWriteIntArray,  
    inReadFloatArray, inWriteFloatArray,  
    inReadData, inWriteData,  
    inReadRefcon, inWriteRefcon)
```

NOTE

More than one dataref using the same callback is not supported.

Example

```
self.MyGetDataCB = self.MyGetDataCallback
self.MySetDataCB = self.MySetDataCallback

self.ByteArrayDataRef =
XPLMRegisterDataAccessor(self, "sandybarbour/example/bytearray",
    xplmType_Data, 1,
    None, None,
    None, None,
    None, None,
    None, None,
    None, None,
    self.MyGetDataCB, self.MySetDataCB,
    0, 0)
```

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XPLMUnregisterDataAccessor(self, inDataRef)

Example

```
XPLMUnregisterDataAccessor(self, self.ByteArrayDataRef)
```

RetVal = XPLMShareData(self, inDataName, inDataType, SharedDataCallback, inNotificationRefcon)

Example

```
self.MyDataChangedCB = self.MyDataChangedCallback  
RetVal = XPLMShareData(self, "xplanesdk/examples/sharedata/sharedint1",  
xplmType_Int, self.MyDataChangedCB, 0)
```

RetVal = XPLMUnshareData(self, inDataName, inDataType, SharedDataCallback, inNotificationRefcon)

Always use the original self MyDataChangedCB variable that was used in the XPLMShareData function

Example

```
RetVal = XPLMUnshareData(self, "xplanesdk/examples/sharedata/sharedint1",  
xplmType_Int, self.MyDataChangedCB, 0)
```

NOTE

More than one dataref using the same callback is not supported.

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XPLMDisplay Module

To use this module add the text below at the start of the PythonInterface script.

```
from XPLMDisplay import *
```

```
RetVal = XPLMRegisterDrawCallback(self, inCallback, inPhase,  
                                  inWantsBefore, inRefcon)
```

Example

```
self.DrawCB = self.DrawCallback  
RetVal = XPLMRegisterDrawCallback(self, self.DrawCB, xplm_Phase_Airplanes, 0, 0)
```

```
RetVal = XPLMUnregisterDrawCallback(self, inCallback, inPhase,  
                                   inWantsBefore, inRefcon)
```

Example

```
RetVal = XPLMUnregisterDrawCallback(self, self.DrawCB, xplm_Phase_Airplanes, 0,  
0)
```

*Always use the original self.DrawCB variable that was used in the
XPLMRegisterDrawCallback function*

```
RetVal = XPLMRegisterKeySniffer(self, KeySnifferCallback, inBeforeWindows,  
                                inRefcon)
```

Example

```
self.MyKeySnifferCB = self.MyKeySniffer  
XPLMRegisterKeySniffer(self, self.MyKeySnifferCB, 1, 0)
```

```
RetVal = XPLMUnregisterKeySniffer(KeySnifferCallback, inBeforeWindows,  
inRefcon)
```

Example

```
XPLMUnregisterKeySniffer(self, self.MyKeySnifferCB, 1, 0)
```

*Always use the original self.MyKeySnifferCB variable that was used in the
XPLMRegisterKeySniffer function*

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Python Interface for Plugin SDK

```
WindowId = XPLMCreateWindow(self, inLeft, inTop, inRight, inBottom,  
    inIsVisible,  
    inDrawWindowCallback,  
    inKeyCallback,  
    inMouseClickedCallback,  
    inRefcon)
```

Note – XPLMCreateWindow does not support refcons so inRefcon should only use 0 (zero) as a value.

Example

```
self.DrawWindowCB = self.DrawWindowCallback  
self.KeyCB = self.KeyCallback  
self.MouseClickCB = self.MouseClickCallback
```

```
self.WindowId = XPLMCreateWindow(self, 50, 600, 300, 400, 1, self.DrawWindowCB,  
self.KeyCB, self.MouseClickCB, 0)
```

```
XPLMDestroyWindow(self, WindowId)
```

Example

```
XPLMDestroyWindow(self, self.WindowId)
```

[NEW SDK2.00 FUNCTION]

```
WindowId = XPLMCreateWindowEx(self, inParams)
```

Example

```
self.DrawWindowCB = self.WindowDraw  
self.KeyCB = self.WindowKey  
self.MouseClickCB = self.WindowMouse  
self.MouseWheelCB = self.inWindowMouseWheel  
self.CursorCB = self.WindowCursor  
XPLMCreateWindowStruct = [50, 450, 600, 350, 1, self.DrawWindowCB, self.KeyCB,  
self.MouseClickCB, self.CursorCB, self.MouseWheelCB, 0]  
self.WindowId = XPLMCreateWindowEx(self, XPLMCreateWindowStruct)
```

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Python Interface for Plugin SDK

XPLMGetScreenSize(outWidth, outHeight)

For outWidth, outHeight pass in None if you don't want any data back.
DO NOT pass in 0 (zero).

Example 1

```
lWidth = []  
XPLMGetScreenSize(lWidth, None)  
Width = int(lWidth [0])
```

Example 2

```
lWidth = []; lHeight = []  
XPLMGetScreenSize(lWidth, lHeight)  
Width = int(lWidth [0]); top = int(lHeight[0])
```

XPLMGetMouseLocation(outX, outY)

For outX, outY pass in None if you don't want any data back.
DO NOT pass in 0 (zero).

Example 1

```
lX = []  
XPLMGetScreenSize(lX, None)  
X = int(lX[0])
```

Example 2

```
lX = []; lY = []  
XPLMGetScreenSize(lX, lY)  
X = int(lX[0]); Y = int(lY[0])
```

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Python Interface for Plugin SDK

XPLMGetWindowGeometry(WindowID, outnLeft, outTop, outRight, outBottom)

For outLeft, outTop, outRight, outBottom pass in None if you don't want any data back.
DO NOT pass in 0 (zero).

Example 1

```
lLeft = []; lTop = []  
XPLMGetWindowGeometry(inWindowID, lLeft, lTop, None, None)  
Left = int(lLeft[0]); Top = int(lTop[0])
```

Example 2

```
lLeft = []; lTop = []; lRight = []; lBottom = []  
XPLMGetWindowGeometry(inWindowID, lLeft, lTop, lRight, lBottom)  
Left = int(lLeft[0]); Top = int(lTop[0]); Right = int(lRight[0]); Bottom = int(lBottom[0])
```

XPLMSetWindowGeometry(WindowID, inLeft, inTop, inRight, inBottom);

Example

```
XPLMSetWindowGeometry(WindowID, 100, 300, 300, 100)
```

WindowIsVisible = XPLMGetWindowIsVisible(WindowID)

Example

```
IsWindowVisible = XPLMGetWindowIsVisible(WindowID)
```

XPLMSetWindowIsVisible(WindowID, WindowIsVisible)

Examples

```
XPLMSetWindowIsVisible(WindowID, 1)  
XPLMSetWindowIsVisible(WindowID, 0)
```

Python Interface for Plugin SDK

RefCon = XPLMGetWindowRefCon(WindowID)

Example

ExtraDataOrWhatever = XPLMGetWindowRefCon(WindowID)

XPLMSetWindowRefCon(WindowID, RefCon)

Example

XPLMSetWindowRefCon(WindowID, 1)

XPLMTakeKeyboardFocus(WindowID)

Example

XPLMTakeKeyboardFocus(WindowID)

To give Keyboard Focus back to X-Plane use :-

XPLMTakeKeyboardFocus(0)

IsWindowInFront = XPLMIsWindowInFront(WindowID)

Example

IsMyWindowInFront = XPLMIsWindowInFront(WindowID)

XPLMBringWindowToFront(WindowID)

Example

XPLMBringWindowToFront(WindowID)

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Python Interface for Plugin SDK

**HotKeyID = XPLMRegisterHotKey(inVirtualKey, inFlags, inDescription,
HotKeyCallback, inRefcon)**

Example

```
self.MyHotKeyCB = self.MyHotKeyCallback  
self.HotKey = XPLMRegisterHotKey(self, XPLM_VK_F1, xplm_DownFlag, "Says  
'Hello World 1'", self.MyHotKeyCB, 0)
```

XPLMUnregisterHotKey(self, HotKeyID)

Example

```
XPLMUnregisterHotKey(self, self.HotKey)
```

NumberOfHotkeys = XPLMCountHotKeys()

Example

```
TotalNumberOfMyHotkeys = XPLMCountHotKeys()
```

HotKeyID = XPLMGetNthHotKey(inIndex)

Example

```
SecondHotKeyID = XPLMGetNthHotKey(1)
```

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Python Interface for Plugin SDK

XPLMGetHotKeyInfo(inHotKey, outVirtualKey, outFlags, outDescription, outPlugin)

For outVirtualKey, outFlags, outDescription, outPlugin pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

Example 1

```
lVirtualKey = []; lDescription = []  
XPLMGetHotKeyInfo(self.HotKey, lVirtualKey, None, lDescription, None)  
VirtualKey = int(lVirtualKey[0]); Description= lDescription[0]
```

Example 2

```
lVirtualKey = []; lFlags= []; lDescription = []; lPlugin = []  
XPLMGetHotKeyInfo(self.HotKey, lVirtualKey, lFlags, lDescription, lPlugin)  
VirtualKey = int(lVirtualKey [0]); Top = int(lFlags[0])  
Description = lDescription[0]; Plugin = int(lPlugin[0])
```

XPLMSetHotKeyCombination(inHotKey, inVirtualKey, inFlags)

Example

```
XPLMSetHotKeyCombination(self.HotKey, XPLM_VK_F1, xplm_DownFlag)
```

Python Interface for Plugin SDK

XPLMGraphics Module

To use this module add the text below at the start of the PythonInterface script.

```
from XPLMGraphics import *
```

```
XPLMSetGraphicsState(inEnableFog, inNumberTexUnits, inEnableLighting,  
inEnableAlphaTesting, inEnableAlphaBlending,  
inEnableDepthTesting, inEnableDepthWriting)
```

Example

```
XPLMSetGraphicsState(0, 1, 0, 0, 1, 0, 0)
```

```
XPLMBindTexture2d(inTextureNum, inTextureUnit)
```

Example

```
self.PANEL_TEXTURE = 0  
XPLMBindTexture2d(self.Texture[self.PANEL_TEXTURE], 0)
```

```
XPLMGenerateTextureNumbers(outTextureIds, inCount)
```

Example

```
self.MAX_TEXTURES = 4  
self.Texture = []  
XPLMGenerateTextureNumbers(self.Texture, self.MAX_TEXTURES)
```

```
Value = XPLMGetTexture(inTexture)
```

Example

```
Value = XPLMGetTexture(inTextureID)
```

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Python Interface for Plugin SDK

outX, outY, outZ = XPLMWorldToLocal(inLatitude, inLongitude, inAltitude)

Example

```
x, y, z = XPLMWorldToLocal(57.123, -3.1234, 1000)
```

outLatitude, outLongitude, outAltitude = XPLMLocalToWorld(inX, inY, inZ)

Example

```
Latitude, Longitude, Altitude = XPLMLocalToWorld(1000, 1000, 1000)
```

XPLMDrawTranslucentDarkBox(Left, Top, Right, Bottom)

Example

```
XPLMDrawTranslucentDarkBox(100, 300, 300, 100)
```

XPLMDrawString(color, Left, Top, Desc, WordWrap, inFontID)

Example

```
Colour = 1.0, 1.0, 1.0
```

```
SayHello = "Hello"
```

```
XPLMDrawString(Colour, 100, 200, SayHello, 0, xplmFont_Basic)
```

XPLMDrawNumber(color, inXOffset, inYOffset, inValue, inDigits, inDecimals, inShowSign, inFontID)

Example

```
Colour = 1.0, 1.0, 1.0
```

```
XPLMDrawNumber(Colour, 100, 200, 123.456, 3, 2, 1, xplmFont_Basic)
```

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Python Interface for Plugin SDK

XPLMGetFontDimensions(inFontID, outCharWidth, outCharHeight, outDigitsOnly)

For outCharWidth, outCharHeight, outDigitsOnly pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

Example 1

```
lCharWidth = []
lCharHeight = []
XPLMGetFontDimensions(xplmFont_Basic, lCharWidth, lCharHeight, None)
CharWidth = int(lCharWidth[0])
CharHeight = int(lCharHeight[0])
```

Example 2

```
lCharWidth = []
lCharHeight = []
lDigitsOnly = []
XPLMGetFontDimensions(xplmFont_Basic, lCharWidth, lCharHeight, lDigitsOnly)
CharWidth = int(lCharWidth[0])
CharHeight = int(lCharHeight[0])
DigitsOnly = int(lDigitsOnly[0])
```

```
Value = XPLMMeasureString_ptr(inFontID, inChar, inNumChars)
```

Example

```
TestString = "A Test String"
StringLength = len(TestString)
WidthInPixels = XPLMMeasureString(xplmFont_Basic, TestString, StringLength)
```

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Python Interface for Plugin SDK

XPLMMenu Module

To use this module add the text below at the start of the PythonInterface script.

```
from XPLMMenu import *
```

```
MenuItem = XPLMAppendMenuItem(inMenu, inItemName, inItemRef,  
inForceEnglish)
```

```
MenuID = XPLMCreateMenu(self, inName, inParentMenu, inParentItem,  
MenuCallback, inMenuRef)
```

Note – XPLMCreateMenu does not support refcons so inMenuRef should only use 0 (zero) as a value.

Example

```
Item = XPLMAppendMenuItem(XPLMFindPluginsMenu(), "MainMenu", 0, 1)  
self.MenuCB = self..MenuCallback  
self.Id = XPLMCreateMenu(self, "MainMenu", XPLMFindPluginsMenu(), Item,  
self.MenuCB, 0)
```

```
XPLMDestroyMenu(self, inMenuID)
```

Example

```
XPLMDestroyMenu(self, self.Id)
```

```
XPLMClearAllMenuItems(inMenuID)
```

Example

```
XPLMClearAllMenuItems(self.Id)
```

```
XPLMAppendMenuSeparator(inMenu)
```

Example

```
XPLMAppendMenuSeparator(self.Id)
```

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Python Interface for Plugin SDK

XPLMSetMenuItemName(inMenu, inIndex, inItemName, inForceEnglish)

Example

```
XPLMSetMenuItemName(self.Id, 1, "TestMenu", 1)
```

XPLMCheckMenuItem(inMenu, inIndex, inCheck)

Examples

```
XPLMCheckMenuItem(self.Id, 1,1)
```

```
XPLMCheckMenuItem(self.Id, 2,0)
```

CheckState = XPLMCheckMenuItemState(inMenu, inIndex)

Example

```
IsMenuItemChecked = XPLMCheckMenuItemState(self.Id, 1)
```

XPLMEnableMenuItem(inMenu, inIndex, inEnabled)

Examples

```
XPLMEnableMenuItem(self.Id, 1,1)
```

```
XPLMEnableMenuItem(self.Id, 1,0)
```

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Python Interface for Plugin SDK

XPLMNavigation Module

To use this module add the text below at the start of the PythonInterface script.

```
from XPLMNavigation import *
```

```
FirstNavAid = XPLMGetFirstNavAid()
```

```
FirstNavAid = XPLMGetFirstNavAid()
```

```
NextNavAid = XPLMGetNextNavAid(inNavAidRef)
```

```
NextNavAid = XPLMGetNextNavAid(inNavAidRef)
```

```
FirstNavAidOfType = XPLMFindFirstNavAidOfType(inType)
```

```
FirstNavAidOfType = XPLMFindFirstNavAidOfType(inType)
```

```
LastNavAidOfType = XPLMFindLastNavAidOfType(inType)
```

```
LastNavAidOfType = XPLMFindLastNavAidOfType(inType)
```

```
NavRef = XPLMFindNavAid(inNameFragment, inIDFragment, inLat, inLon,  
inFrequency, inType)
```

For inIDFragment, inLat, inLon, inFrequency pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

```
NavRef = XPLMFindNavAid(None, "EGPH", None, None, None, xplm_Nav_Airport)
```

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Python Interface for Plugin SDK

XPLMGetNavAidInfo(inRef, outType, outLatitude, outLongitude, outHeight, outFrequency, outHeading, outID, outName, outReg)

For outType, outLatitude, outLongitude, outHeight, outFrequency, outHeading, outID, outName, outReg pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

Pass in an empty list if you want data back.

Example 1

```
IDFragment = "EGPH"
```

```
NavRef1 = XPLMFindNavAid(None, IDFragment, None, None, None,  
xplm_Nav_Airport)
```

```
if (NavRef1 != XPLM_NAV_NOT_FOUND):
```

```
    outLatitude = []
```

```
    outLongitude = []
```

```
    outID = []
```

```
    outName = []
```

```
    XPLMGetNavAidInfo(NavRef1, None, outLatitude, outLongitude, None, None,  
None, outID, outName, None)
```

Example 2

```
IDFragment = "EDN"
```

```
NavRef2 = XPLMFindNavAid(None, IDFragment, None, None, None,  
xplm_Nav_NDB)
```

```
if (NavRef2 != XPLM_NAV_NOT_FOUND):
```

```
    outType = []
```

```
    outLatitude = []
```

```
    outLongitude = []
```

```
    outHeight = []
```

```
    outFrequency = []
```

```
    outHeading = []
```

```
    outID = []
```

```
    outName = []
```

```
    outReg = []
```

```
    XPLMGetNavAidInfo(NavRef2, outType, outLatitude, outLongitude, outHeight,  
outFrequency, outHeading, outID, outName, outReg)
```

Written by Sandy Barbour – 5th May, 2005

Updated by Sandy Barbour -Tuesday, 25 September 2012

Python Interface for Plugin SDK

FMSEntries = XPLMCountFMSEntries()

Example

NumberOfFMSEntries = XPLMCountFMSEntries()

GetDisplayedFMSEntry = XPLMGetDisplayedFMSEntry()

Example

DisplayedFMSEntry = XPLMGetDisplayedFMSEntry()

DestinationFMSEntry = XPLMGetDestinationFMSEntry()

DestinationFMSEntry = XPLMGetDestinationFMSEntry()

XPLMSetDisplayedFMSEntry(inIndex)

XPLMSetDisplayedFMSEntry(1)

XPLMSetDestinationFMSEntry(inIndex)

XPLMSetDestinationFMSEntry(1)

Written by Sandy Barbour – 5th May, 2005

Updated by Sandy Barbour -Tuesday, 25 September 2012

Python Interface for Plugin SDK

XPLMGetFMSEntryInfo(Index, outType, outID, outRef, outAltitude, outLat, outLon)

For outType, outID, outRef, outAltitude, outLat, outLon pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

Example 1

```
Index = XPLMGetDisplayedFMSEntry()
outID = []; outAltitude = []; outLat = []; outLon = []
XPLMGetFMSEntryInfo(Index, None, outID, None, outAltitude, outLat, outLon)
```

Example 2

```
Index = XPLMGetDisplayedFMSEntry()
outType = []; outID = []; outRef = []; outAltitude = []; outLat = []; outLon = []
XPLMGetFMSEntryInfo(Index, outType, outID, outRef, outAltitude, outLat, outLon)
```

XPLMSetFMSEntryInfo(inIndex, inRef, inAltitude)

Example

```
IDFragment = "EGPH"
NavRef = XPLMFindNavAid(None, IDFragment, None, None, None,
xplm_Nav_Airport)
```

```
Index = XPLMGetDisplayedFMSEntry()
XPLMSetFMSEntryInfo(Index, NavRef, 1000)
```

XPLMSetFMSEntryLatLon(Index, Lat, Lon, Altitude)

Example

```
Index = XPLMGetDisplayedFMSEntry()
XPLMSetFMSEntryLatLon(Index, 57.3, -.314, 1000)
```

XPLMClearFMSEntry(inIndex)

Examples

```
XPLMClearFMSEntry(1)
XPLMClearFMSEntry(XPLMGetDisplayedFMSEntry())
```

Written by Sandy Barbour – 5th May, 2005

Updated by Sandy Barbour -Tuesday, 25 September 2012

Python Interface for Plugin SDK

GPSDestinationType = XPLMGetGPSDestinationType()

Example

GPSDestinationType = XPLMGetGPSDestinationType()

GPSDestination = XPLMGetGPSDestination()

Example

GPSDestination = XPLMGetGPSDestination()

Written by Sandy Barbour – 5th May, 2005

Updated by Sandy Barbour -Tuesday, 25 September 2012

Python Interface for Plugin SDK

XPLMPlanes Module

To use this module add the text below at the start of the PythonInterface script.

```
from XPLMPlanes import *
```

XPLMSetUsersAircraft(inAircraftPath)

Example

```
XPLMSetUsersAircraft("Aircraft/General Aviation/King Air B200/King Air B200.acf")
```

XPLMPlaceUserAtAirport(inAirportCode)

Example

```
XPLMPlaceUserAtAirport("EGPH")
```

outTotalAircraft, outActiveAircraft, outController = XPLMCountAircraft()

Example

```
TotalAircraft, ActiveAircraft, Controller = XPLMCountAircraft()
```

outFileName, outPath = XPLMGetNthAircraftModel(inIndex)

outFileName, outPath = XPLMGetNthAircraftModel_NP(self, inIndex) *[SDK 2.10]*

Example

```
TotalAircraft, ActiveAircraft, Controller = XPLMCountAircraft()
```

```
if (TotalAircraft > 2):
```

```
    FileName, Path = XPLMGetNthAircraftModel(2)
```

XPLMAcquirePlanes(self, pAircraft, PlanesAvailableCallback, inRefcon)

Pass in "pAircraft" as a list of strings.

e.g.

To build up the strings of the aircraft path names.

```
pAircraft = []
```

```
...
```

Then in a loop use this to add to the list.

```
pAircraft.append(AircraftString)
```

After the loop makes sure that an empty string is added to the list.

```
pAircraft.append("")
```

Written by Sandy Barbour – 5th May, 2005

Updated by Sandy Barbour -Tuesday, 25 September 2012

Python Interface for Plugin SDK

XPLMReleasePlanes(self)

Example

```
XPLMReleasePlanes(self)
```

XPLMSetActiveAircraftCount(inCount)

Example

```
XPLMSetActiveAircraftCount(2)
```

XPLMSetAircraftModel(inIndex, inAircraftPath)

Example

```
XPLMSetAircraftModel(1, inAircraftPath)
```

XPLMDisableAIForPlane(inPlaneIndex)

Example

```
XPLMDisableAIForPlane(2)
```

XPLMDrawAircraft(inPlaneIndex, inX, inY, inZ, inPitch, inRoll, inYaw, inFullDraw, inDrawStateInfo)

Pass in the “inDrawStateInfo” structure as a list.

See the plugin SDK documentation for the members of the DrawStateInfo structure.

Written by Sandy Barbour – 5th May, 2005

Updated by Sandy Barbour -Tuesday, 25 September 2012

Python Interface for Plugin SDK

XPLMPlugin Module

To use this module add the text below at the start of the PythonInterface script.

```
from XPLMPlugin import *
```

```
PluginID = XPLMGetMyID()
```

Example

```
ID = XPLMGetMyID()
```

```
NumberOfPlugins = XPLMCountPlugins()
```

Example

```
TotalPlugins = XPLMCountPlugins()
```

```
PluginID = XPLMGetNthPlugin(inIndex)
```

Example

```
Index = 3
```

```
TotalPlugins = XPLMCountPlugins()
```

```
if (Index < TotalPlugins)
```

```
    PluginID = XPLMGetNthPlugin(Index)
```

```
PluginID = XPLMFindPluginByPath(inPath)
```

```
PluginID = XPLMFindPluginByPath_NP(self, inPath) [SDK 2.10]
```

Example

```
FileName = "Resources/plugins/DataRefEditorWin.xpl"
```

```
SystemPath = XPLMGetSystemPath()
```

```
PluginPath = SystemPath + FileName
```

```
PluginID = XPLMFindPluginByPath(PluginPath)
```

Written by Sandy Barbour – 5th May, 2005

Updated by Sandy Barbour -Tuesday, 25 September 2012

Python Interface for Plugin SDK

PluginID = XPLMFindPluginBySignature(inSignature)

Example

```
Signature = "xplanesdk.examples.DataRefEditor"  
PluginID = XPLMFindPluginBySignature(Signature)
```

XPLMGetPluginInfo(inPlugin, outName, outFilePath, outSignature, outDescription)

XPLMGetPluginInfo_NP (self, inPlugin, outName, outFilePath, outSignature, outDescription) [SDK 2.10]

For outName, outFilePath, outSignature, outDescription pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

Example

```
Index = 3  
TotalPlugins = XPLMCountPlugins()  
if (Index < TotalPlugins)  
    PluginID = XPLMGetNthPlugin(Index)  
    Name = [], FilePath = [], Signature = [], Description = []  
    XPLMGetPluginInfo(PluginID, Name, FilePath, Signature, Description)
```

IsPluginEnabled = XPLMIsPluginEnabled(inPluginID)

Example

```
Index = 3  
TotalPlugins = XPLMCountPlugins()  
if (Index < TotalPlugins)  
    PluginID = XPLMGetNthPlugin(Index)  
    IsPluginEnabled = XPLMIsPluginEnabled(PluginID)
```

Written by Sandy Barbour – 5th May, 2005

Updated by Sandy Barbour -Tuesday, 25 September 2012

Python Interface for Plugin SDK

RetVal = XPLMEnablePlugin(inPluginID)

Example

```
Index = 3
TotalPlugins = XPLMCountPlugins()
if (Index < TotalPlugins)
    PluginID = XPLMGetNthPlugin(Index)
    PluginEnableState = XPLMEnablePlugin(PluginID)
```

XPLMDisablePlugin(inPluginID)

Example

```
Index = 3
TotalPlugins = XPLMCountPlugins()
if (Index < TotalPlugins)
    PluginID = XPLMGetNthPlugin(Index)
    XPLMDisablePlugin(PluginID)
```

XPLMReloadPlugins()

Example

```
XPLMReloadPlugins()
```

XPLMSendMessageToPlugin(inPlugin, inMessage, Param)

Example

```
MSG_ADD_DATAREF = 0x01000000
PluginID = XPLMFindPluginBySignature("xplanesdk.examples.DataRefEditor")
if (PluginID != XPLM_NO_PLUGIN_ID):
    XPLMSendMessageToPlugin(PluginID, MSG_ADD_DATAREF,
        "sandybarbour/example/bytearray")
```

Written by Sandy Barbour – 5th May, 2005

Updated by Sandy Barbour -Tuesday, 25 September 2012

Python Interface for Plugin SDK

[NEW SDK2.00 FUNCTIONS]

HasFeature = XPLMHasFeature(inFeature)

HasFeature = XPLMHasFeature("XPLM_WANTS_REFLECTIONS")

IsFeatureEnabled = XPLMIsFeatureEnabled(inFeature)

IsFeatureEnabled = XPLMIsFeatureEnabled("XPLM_WANTS_REFLECTIONS")

XPLMEnableFeature(self, inFeature, inEnable) [SDK 2.10]

XPLMEnableFeature(self, "XPLM_WANTS_REFLECTIONS", 1)

XPLMEnableFeature(self, "XPLM_WANTS_REFLECTIONS", 0)

XPLMEnableFeature(self, "XPLM_USE_NATIVE_PATHS", 1)

XPLMEnableFeature(self, "XPLM_USE_NATIVE_PATHS", 0)

NOTE

The old XPLMEnableFeature function did not have the “self” parameter.

This was added for SDK 2.10 so that native paths could be handled on a per script basis.

You will get an error message in the PythonInterface log to warn you that the function will need to be changed for SDK 2.10 usage

XPLMEnumerateFeatures(self, inEnumerator, inRef)

PI_RemoveEnumerateFeatures(self, inEnumerator, inRef)

NOTE – PI_RemoveEnumerateFeatures is not part of the plugin SDK

Example

self.FeatureEnumCB = self.FeatureEnum

XPLMEnumerateFeatures(self, self.FeatureEnumCB, 0)

To remove callback.

PI_RemoveEnumerateFeatures(self, self.FeatureEnumCB, 0)

Written by Sandy Barbour – 5th May, 2005

Updated by Sandy Barbour -Tuesday, 25 September 2012

Python Interface for Plugin SDK

XPLMProcessing Module

To use this module add the text below at the start of the PythonInterface script.

```
from XPLMProcessing import *
```

```
ElapsedTime = XPLMGetElapsedTime()
```

```
ElapsedTime = XPLMGetElapsedTime()
```

```
CycleNumber = XPLMGetCycleNumber()
```

```
CycleNumber = XPLMGetCycleNumber()
```

```
XPLMRegisterFlightLoopCallback(self, inFlightLoopCallback, inInterval,  
inRefcon)
```

```
XPLMUnregisterFlightLoopCallback(self, inFlightLoopCallback, inRefcon)
```

Example

```
self.FlightLoopCB = self.FlightLoopCallback  
XPLMRegisterFlightLoopCallback(self, self.FlightLoopCB, 1.0, 0)
```

```
XPLMUnregisterFlightLoopCallback(self, self.FlightLoopCB, 0)
```

*Always use the original self.FlightLoopCB variable that was used in the
XPLMRegisterFlightLoopCallback function*

```
XPLMSetFlightLoopCallbackInterval(self, inFlightLoopCallback, inInterval,  
inRelativeToNow, inRefcon)
```

Example

```
XPLMSetFlightLoopCallbackInterval(self, self.FlightLoopCB, 2.0, 0,0)
```

Written by Sandy Barbour – 5th May, 2005

Updated by Sandy Barbour -Tuesday, 25 September 2012

Python Interface for Plugin SDK

[New in SDK 2.10]

XPLMFlightLoopID = XPLMCreateFlightLoop(self, XPLMCreateFlightLoop_t)

XPLMDestroyFlightLoop(self, FlightLoopID)

XPLMScheduleFlightLoop(self, FlightLoopID, Interval, RelativeToNow);

Example

Standard FLCB

```
def LoopCallback(self, elapsedMe, elapsedSim, counter, refcon):  
    return 1.0
```

Can be anywhere

```
self.LoopCB = self.LoopCallback
```

```
CreateFlightLoop_t = [1, self.LoopCB, 0]
```

```
self.FlightLoopID = XPLMCreateFlightLoop(self, CreateFlightLoop_t)
```

Can be anywhere

```
XPLMScheduleFlightLoop(self, self.FlightLoopID, 1.0, 1)
```

Can be anywhere

```
XPLMDestroyFlightLoop(self, self.FlightLoopID)
```

Written by Sandy Barbour – 5th May, 2005

Updated by Sandy Barbour -Tuesday, 25 September 2012

Python Interface for Plugin SDK

[NEW SDK2.00 Module]

XPLMScenery Module

To use this module add the text below at the start of the PythonInterface script.

```
from XPLMScenery import *
```

```
ProbeRef = XPLMCreateProbe_ptr(inProbeType)
```

```
ProbeRef = XPLMCreateProbe(xplm_ProbeY)
```

```
XPLMDestroyProbe_ptr(inProbe)
```

```
XPLMDestroyProbe_ptr(ProbeRef)
```

```
ProbeResult = XPLMProbeTerrainXYZ(inProbe, inX, inY, inZ, outInfo)
```

Example

```
refx = XPLMFindDataRef("sim/flightmodel/position/local_x")
refy = XPLMFindDataRef("sim/flightmodel/position/local_y")
refz = XPLMFindDataRef("sim/flightmodel/position/local_z")
info = []
self.result = XPLMProbeTerrainXYZ(self.SDK200TestsTruckProbe,
XPLMGetData(refx), XPLMGetData(refy), XPLMGetData(refz), info)
```

```
ObjectRef = XPLMLoadObject(inPath)
```

```
ObjectRef = XPLMLoadObject("test.obj")
```

```
XPLMUnloadObject(inObject)
```

```
XPLMUnloadObject(ObjectRef)
```

Written by Sandy Barbour – 5th May, 2005

Updated by Sandy Barbour -Tuesday, 25 September 2012

Python Interface for Plugin SDK

XPLMDrawObjects(inObject, inCount, inLocations, lighting, earth_relative)

Example

```
refx = XPLMFindDataRef("sim/flightmodel/position/local_x")
refy = XPLMFindDataRef("sim/flightmodel/position/local_y")
refz = XPLMFindDataRef("sim/flightmodel/position/local_z")
refp = XPLMFindDataRef("sim/flightmodel/position/theta ")
refh = XPLMFindDataRef("sim/flightmodel/position/psi ")
refr = XPLMFindDataRef("sim/flightmodel/position/phi ")
```

```
x = XPLMGetDataf(refx)
y = XPLMGetDataf(refy)
z = XPLMGetDataf(refz)
pitch = XPLMGetDataf(refp)
heading = XPLMGetDataf(refh)
roll = XPLMGetDataf(refr)
```

NOTE

inLocations is a list of lists.

You create your individual location lists for object placements.

Then you add these to the list that is used in the function.

```
location1 = [x, y, z, pitch, heading, roll]
location2 = [x+100, y, z+100, pitch, heading+90, roll]
locations = [location1, location2]
XPLMDrawObjects(self, ObjectRef, 1, locations, 0, 1)
```

NumberOfObjects = XPLMLookupObjects(inPath, inLatitude, inLongitude, inEnumerator, InRef)

PI_RemoveLookupObjects (self, inEnumerator, inRef)

NOTE – PI_RemoveLookupObjects is not part of the plugin SDK

Example

```
self.LoadObjectCB = self.LoadObject
XPLMLookupObjects(self, self.ObjectPath], 0, 0, self.LoadObjectCB, 0)
```

To remove callback.

```
PI_RemoveLookupObjects(self, self.LoadObjectCB, 0)
```

Written by Sandy Barbour – 5th May, 2005

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Python Interface for Plugin SDK

[New in SDK 2.10]

XPLMLoadObjectAsync(self,Path,Callback,Refcon)

PI_RemoveObjectLoadedCallback (self, inEnumerator, inRef)

NOTE – PI_RemoveObjectLoadedCallback is not part of the plugin SDK

Example

```
def Windssock(self, Object, Refcon):  
    Pass
```

```
self.WindssockCB = self.Windssock  
XPLMLoadObjectAsync(self, inFileName, self.WindssockCB, 0)
```

To remove callback.

```
PI_RemoveObjectLoadedCallback(self, self.WindssockCB)
```

Written by Sandy Barbour – 5th May, 2005

Updated by Sandy Barbour -Tuesday, 25 September 2012

Python Interface for Plugin SDK

XPLMUtilities Module

To use this module add the text below at the start of the PythonInterface script.

```
from XPLMUtilities import *
```

XPLMSpeakString(SpeakString)

Example

```
XPLMSpeakString("Some boring old text")
```

XPLMCommandKeyStroke(Key)

Example

```
XPLMCommandKeyStroke(xplm_key_pause)
```

XPLMCommandButtonPress(Button)

Example

```
XPLMCommandButtonPress(xplm_joy_pause)
```

XPLMCommandButtonRelease(Button)

Example

```
XPLMCommandButtonRelease(xplm_joy_pause)
```

VirtualKeyDescription = XPLMGetVirtualKeyDescription(VirtualKey)

Example

```
Description = XPLMGetVirtualKeyDescription(XPLM_VK_A)
```

Written by Sandy Barbour – 5th May, 2005

Updated by Sandy Barbour -Tuesday, 25 September 2012

Python Interface for Plugin SDK

XPLMReloadScenery()

Example

```
if (ForceSceneryReload):  
    XPLMReloadScenery()
```

SystemPath = XPLMGetSystemPath()

SystemPath = XPLMGetSystemPath_NP(self) [SDK 2.10]

Example

```
FileName = "Resources/plugins/DataRefEditorWin.xpl"  
SystemPath = XPLMGetSystemPath()  
PluginPath = SystemPath + FileName
```

PrefsPath = XPLMGetPrefsPath()

PrefsPath = XPLMGetPrefsPath_NP(self) [SDK 2.10]

Example

```
FileName = "MyPrefs.txt "  
PrefsPath = XPLMGetPrefsPath ()  
MyPrefsFile = PrefsPath + FileName
```

DirectorySeparator = XPLMGetDirectorySeparator()

DirectorySeparator = XPLMGetDirectorySeparator_NP(self) [SDK 2.10]

Example

```
SeparatorForOS = XPLMGetDirectorySeparator()
```

Written by Sandy Barbour – 5th May, 2005

Updated by Sandy Barbour -Tuesday, 25 September 2012

Python Interface for Plugin SDK

PathOnly, FullPath = XPLMExtractFileAndPath(FullPath)

PathOnly, FullPath = XPLMExtractFileAndPath_NP (self, FullPath) [SDK 2.10]

NOTE – Paths in the examples are for windows.

Example1

```
TempTuple = XPLMExtractFileAndPath("C:\\TestDir\\Dir1\\TestFile.txt")
```

```
FilePart = TempTuple[0]
```

```
PathPart = TempTuple[1]
```

Example2

```
PathOnly, FullPath = XPLMExtractFileAndPath(("C:\\TestDir\\Dir1\\TestFile.txt"))
```

**RetVal, outFileNames, outIndices, outTotalFiles, outReturnedFiles =
XPLMGetDirectoryContents(inDirectoryPath, inFirstReturn, inFileNameBufSize,
inIndexCount)**

**RetVal, outFileNames, outIndices, outTotalFiles, outReturnedFiles =
XPLMGetDirectoryContents_NP(self, inDirectoryPath, inFirstReturn,
inFileNameBufSize, inIndexCount) [SDK 2.10]**

NOTE - Make sure you have read the plugin SDK docs before using this function.

NOTE – Path in this example is for windows.

Example

```
outFileNames = []
```

```
outIndices = []
```

```
outTotalFiles = []
```

```
outReturnedFiles = []
```

```
RetVal = XPLMGetDirectoryContents("C:\\ TestDir ", 0, outFileNames, 4096,  
outIndices, 4096, outTotalFiles, outReturnedFiles);
```

XPlaneVersion, XPLMVersion, HostID = XPLMGetVersions()

Example

```
XPlaneVersion, XPLMVersion, HostID = XPLMGetVersions()
```

LanguageCode = XPLMGetLanguage()

Example

```
LanguageCode = XPLMGetLanguage()
```

Written by Sandy Barbour – 5th May, 2005

Updated by Sandy Barbour -Tuesday, 25 September 2012

Python Interface for Plugin SDK

XPLMDebugString(DebugDataString)

Example

```
XPlaneVersion, XPLMVersion, HostID = XPLMGetVersions()  
Buffer = "XPLMGetVersions returned [XPlaneVersion = %d, XPLMVersion = %d,  
HostID = %d\n" % (XPlaneVersion, XPLMVersion, HostID)  
XPLMDebugString(Buffer)
```

[NEW SDK2.00 FUNCTION]

XPLMSetErrorCallback(ErrorCallback)

PI_RemoveErrorCallback(self, self.TestErrorCB)

NOTE – PI_RemoveErrorCallback is not part of the plugin SDK

Example

```
self.TestErrorCB = self. TestErrorCallback  
XPLMSetErrorCallback(self, self.TestErrorCB)
```

To remove the callback

```
PI_RemoveErrorCallback(self, self.TestErrorCB)
```

Example Callback

```
def TestErrorCallback(self, msg):  
    pass
```

Written by Sandy Barbour – 5th May, 2005

Updated by Sandy Barbour -Tuesday, 25 September 2012

Python Interface for Plugin SDK

[NEW SDK2.00 FUNCTIONS]

FunctionPointer = **XPLMFindSymbol**(inString)

Note

This function requires the ctypes python module.

This is included in Python 2.5 but needs to be installed for Python 2.3 and Python 2.4.

Example

```
XPLMGetVersionsPrototype = CFUNCTYPE(POINTER(c_int), POINTER(c_int),  
POINTER(c_int))
```

```
XPLMGetVersionsTemp =  
XPLMGetVersionsPrototype(XPLMFindSymbol("XPLMGetVersions"))
```

```
XPlaneVersion = c_int()  
XPLMVersion = c_int()  
HostID = c_int()
```

```
XPLMGetVersionsTemp(byref(XPlaneVersion), byref(XPLMVersion), byref(HostID))
```

XPLMLoadDataFile(inFileType, inFilePath)

XPLMLoadDataFile_NP(self, inFileType, inFilePath) [SDK 2.10]

NOTE – The path format for these functions was native, but they are included for completeness.

Examples

```
Success = XPLMLoadDataFile(xplm_DataFile_Situation, "Output/situations/test.sit")  
Success = XPLMLoadDataFile(xplm_DataFile_ReplayMovie, "Output/replays/test.rep")
```

XPLMSaveDataFile(inFileType, inFilePath)

XPLMSaveDataFile_NP(self, inFileType, inFilePath) [SDK 2.10]

Examples

```
Success = XPLMSaveDataFile(xplm_DataFile_Situation, "Output/situations/test.sit")  
Success = XPLMSaveDataFile(xplm_DataFile_ReplayMovie, "Output/situations/test.sit")
```

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Python Interface for Plugin SDK

CommandRef = XPLMFindCommand(inName)

Example

```
CommandRef = XPLMFindCommand("sim/operation/pause_toggle")
```

XPLMCommandBegin(inCommand)

XPLMCommandEnd(inCommand)

Example

```
CommandRef = XPLMFindCommand("sim/operation/pause_toggle")
```

```
XPLMCommandBegin(CommandRef)
```

```
XPLMCommandEnd(CommandRef)
```

XPLMCommandOnce(inCommand)

Example

```
CommandRef = XPLMFindCommand("sim/operation/pause_toggle")
```

```
XPLMCommandOnce(CommandRef)
```

CommandRef = XPLMCreateCommand(inName, inDescription)

See example below.

XPLMRegisterCommandHandler(inCommand, inHandler, inBefore, inRefcon)

Example

```
self.Command = XPLMCreateCommand("sandy/command/silly", "Silly Example  
Command")
```

```
self.CommandHandlerCB = self.CommandHandler
```

```
XPLMRegisterCommandHandler(self, self.Command, self.CommandHandlerCB, 0, 0)
```

XPLMUnregisterCommandHandler(inCommand, inHandler, inBefore, inRefcon)

Example

```
XPLMUnregisterCommandHandler(self, self.Command, self.CommandHandlerCB, 0, 0)
```

Always use the original self.CommandHandlerCB variable that was used in the XPLMRegisterCommandHandler function

Written by Sandy Barbour – 5th May, 2005

Updated by Sandy Barbour -Tuesday, 25 September 2012

Python Interface for Plugin SDK

XPUIGraphics Module

To use this module add the text below at the start of the PythonInterface script.

```
from XPUIGraphics import *
```

XPDrawWindow(inX1, inY1, inX2, inY2, inStyle)

Example

```
XPDrawWindow(100, 200, 200, 100, xpWindow_Help)
```

XPGetWindowDefaultDimensions(inStyle, outWidth, outHeight)

For outWidth, outHeight pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

Example

```
lWidth = []; lHeight = []  
XPGetWindowDefaultDimensions(xpWidgetClass_MainWindow, lWidth, lHeight)  
Width = int(lWidth[0]); Height = int(lHeight[0])
```

XPDrawElement(inX1, inY1, inX2, inY2, inStyle, inLit)

Example

```
XPDrawElement(100, 300, 200, 322, xpElement_PushButton, 0)
```

XPGetElementDefaultDimensions(inStyle, outWidth, outHeight, outCanBeLit)

For outWidth, outHeight, outCanBeLit pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

Example

```
lWidth = []; lHeight = []; lCanBeLit = []  
XPGetWindowDefaultDimensions(xpWidgetClass_MainWindow, lWidth, lHeight,  
lCanBeLit)  
Width = int(lWidth[0]); Height = int(lHeight[0]); CanBeLit = int(lCanBeLit[0])
```

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Python Interface for Plugin SDK

XPDrawTrack(inX1, inY1, inX2, inY2, inMin, inMax, inValue, inTrackStyle, inLit)

Example

```
XPDrawTrack(100, 300, 200, 322, 0, 100, 0, xpTrack_ScrollBar, 0)
```

outWidth, outCanBeLit = XPGetTrackDefaultDimensions(inStyle)

outIsVertical, outDownBtnSize, outDownPageSize, outThumbSize, outUpPageSize, outUpBtnSize = XPGetTrackMetrics(inX1, inY1, inX2, inY2, inMin, inMax, inValue, inTrackStyle)

Example

```
XPDrawTrack(100, 300, 200, 322, 0, 100, 0, xpTrack_ScrollBar, 0)
```

```
IsVertical, DownBtnSize, DownPageSize, ThumbSize, UpPageSize, UpBtnSize =  
XPGetTrackMetrics(100, 300, 200, 322, 0, 100, 0, xpTrack_ScrollBar)
```

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Python Interface for Plugin SDK

XPWidgets Module

To use this module add the text below at the start of the PythonInterface script.

```
from XPWidgets import *
```

```
outWidgetID = XPCreateWidget(inLeft, inTop, inRight, inBottom, inVisible,  
inDescriptor, inIsRoot, inContainer, inClass)
```

Example

```
WidgetID = XPCreateWidget(inLeft, inTop, inRight, inBottom, inVisible, inDescriptor,  
inIsRoot, inContainer, inClass)
```

```
outWidgetID = XPCreateCustomWidget(inLeft, inTop, inRight, inBottom,  
inVisible, inDescriptor, inIsRoot, inContainer, WidgetCallback)
```

Example

```
WidgetID = XPCreateCustomWidget(inLeft, inTop, inRight, inBottom, inVisible,  
inDescriptor, inIsRoot, inContainer, WidgetCallback)
```

```
XPAddWidgetCallback(inWidget, WidgetCallback)
```

Example

```
XPAddWidgetCallback(WidgetID, WidgetCallback)
```

```
XPDestroyWidget(inWidget, inDestroyChildren)
```

Example

```
XPDestroyWidget(Widget, 1)
```

```
MessageHandled = XPSendMessageToWidget(inWidget, inMessage, inMode,  
inParam1, inParam2)
```

Example

```
MessageHandled = XPSendMessageToWidget(WidgetID, xpMsg_KeyTakeFocus,  
xpMode_Direct, 0, 0)
```

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Python Interface for Plugin SDK

XPPlaceWidgetWithin(inSubWidget, inContainer)

Example

```
XPPlaceWidgetWithin(WidgetID2, WidgetID1)
```

NumberOfChildWidgets = XPCountChildWidgets(inWidget)

Example

```
NumberOfChildWidgets = XPCountChildWidgets(WidgetID)
```

outWidgetID = XPGetNthChildWidget(inWidget, inIndex)

Example

```
ChildWidgetID = XPGetNthChildWidget(WidgetID, 3)
```

outWidgetID = XPGetParentWidget(inWidget)

Example

```
ParentWidgetID = XPGetParentWidget(WidgetID)
```

XPShowWidget(inWidget)

Example

```
XPShowWidget(WidgetID)
```

XPHideWidget(inWidget)

Example

```
XPHideWidget(WidgetID)
```

IsWidgetVisible = XPWidgetVisible(inWidget)

Example

```
IsWidgetVisible = XPWidgetVisible(WidgetID)
```

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Python Interface for Plugin SDK

outWidgetID = XPFindRootWidget(inWidget)

Example

```
RootWidgetID = XPFindRootWidget(ChildWidgetID)
```

XPBringRootWidgetToFront(inWidget)

Example

```
XPBringRootWidgetToFront(WidgetID)
```

IsWidgetInFront = XPWidgetInFront(inWidget)

Example

```
IsWidgetInFront = XPWidgetInFront(WidgetID)
```

XPGetWidgetGeometry(inWidget, outLeft, outTop, outRight, outBottom)

For outLeft, outTop, outRight, outBottom pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

Example

```
lLeft = []; lTop = []; lRight = []; lBottom = []
XPGetWidgetGeometry(WidgetID, lLeft, lTop, lRight, lBottom);
Left = int(lLeft[0]); Top = int(lTop[0]); Right = int(lRight[0]); Bottom = int(lBottom[0])
```

XPSetWidgetGeometry(inWidget, inLeft, inTop, inRight, inBottom)

Example

```
XPSetWidgetGeometry(WidgetID, inLeft, inTop, inRight, inBottom)
```

outWidgetID = XPGetWidgetForLocation(inContainer, inXOffset, inYOffset, inRecursive, inVisibleOnly)

Example

```
LocationWidgetID = XPGetWidgetForLocation(WidgetID, 400, 400, 1, 0)
```

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Python Interface for Plugin SDK

XPGetWidgetExposedGeometry(inWidgetID, outLeft, outTop, outRight, outBottom)

For outLeft, outTop, outRight, outBottom pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

Example

```
lLeft = []; lTop = []; lRight = []; lBottom = []
XPGetWidgetExposedGeometry(WidgetID, lLeft, lTop, lRight, lBottom);
Left = int(lLeft[0]); Top = int(lTop[0])
Right = int(lRight[0]); Bottom = int(lBottom[0])
```

XPSetWidgetDescriptor(inWidget, inDescriptor)

Example

```
XPSetWidgetDescriptor(WidgetID, "Some Text")
```

WidgetDescriptorLength = XPGetWidgetDescriptor(inWidget, outDescriptor, inMaxDescLength)

Pass in "outDescriptor" as an empty list.

Example

```
lDescriptor = []
XPGetWidgetDescriptor(WidgetID, lDescriptor, 20)
Descriptor = lDescriptor[0]
```

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Python Interface for Plugin SDK

XPSetWidgetProperty(inWidget, inProperty, inValue)

Example

```
XPSetWidgetProperty(WidgetID, inProperty, inValue)
```

WidgetProperty = XPGetWidgetProperty(inWidget, inProperty, inExists)

For inExists pass in None if you don't want any data back.

DO NOT pass in 0 (zero).

Example

```
WidgetProperty = XPGetWidgetProperty(WidgetID, inProperty, inExists)
```

```
WidgetProperty = XPGetWidgetProperty(WidgetID, inProperty, None)
```

outWidgetID = XPSetKeyboardFocus(inWidget)

Example

```
WidgetIDThatGotFocus = XPSetKeyboardFocus(WidgetID)
```

XP LoseKeyboardFocus(inWidget)

Example

```
XP LoseKeyboardFocus(WidgetID)
```

outWidgetID = XPGetWidgetWithFocus()

Example

```
WidgetWithFocusID = XPGetWidgetWithFocus()
```

WidgetFunc = XPGetWidgetClassFunc(inWidgetClass)

Example

```
WidgetFunc = XPGetWidgetClassFunc(xpWidgetClass_MainWindow)
```

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Python Interface for Plugin SDK

XPWidgetUtils Module

To use this module add the text below at the start of the PythonInterface script.

```
from XPWidgetsUtils import *
```

XPUCreateWidgets(inWidgetDefs, inCount, inParamParent, ioWidgets)

Pass in “ioWidgets” as an empty list.

XPUMoveWidgetBy(inWidget, inDeltaX, inDeltaY)

Example

```
XPUMoveWidgetBy(WidgetID, inDeltaX, inDeltaY)
```

FixedLayout = XPUFixedLayout(inMessage, inWidget, inParam1, inParam2)

Example

```
FixedLayout = XPUFixedLayout(Message, WidgetID, inParam1, inParam2)
```

SelectIfNeeded = XPUSelectIfNeeded(inMessage, inWidget, inParam1, inParam2, inEatClick)

Example

```
SelectIfNeeded = XPUSelectIfNeeded(Message, WidgetID, inParam1, inParam2, inEatClick)
```

DefocusKeyboard = XPUDefocusKeyboard(inMessage, inWidget, inParam1, inParam2, inEatClick)

Example

```
DefocusKeyboard = XPUDefocusKeyboard(Message, WidgetID, inParam1, inParam2, inEatClick)
```

DragWidget = XPUDragWidget(inMessage, inWidget, inParam1, inParam2, inLeft, inTop, inRight, inBottom)

Example

```
DragWidget = XPUDragWidget(Message, WidgetID, inParam1, inParam2, inLeft, inTop, inRight, inBottom)
```

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Python Interface for Plugin SDK

XPWidgetDefs Module

To use this module add the text below at the start of the PythonInterface script.

```
from XPWidgetDefs import *
```

```
x, y, button, delta = PI_GetMouseState(inParam1)
```

*Note that in SDK2.00 there is an extra parameter delta.
However this does not appear to work in the C Plugin SDK yet.*

Example

```
def MainWidgetHandler (self, inMessage, inWidget,          inParam1, inParam2):  
  
    if (inMessage == xpMsg_MouseDown):  
        x, y, button, delta = PI_GetMouseState(inParam1)  
  
    return 0
```

```
dx, dy, dwidth, dheight = PI_GetWidgetGeometryChange(inParam2)
```

Example

```
def MainWidgetHandler (self, inMessage, inWidget,          inParam1, inParam2):  
  
    if (inMessage == xpMsg_Reshape):  
        dx, dy, dwidth, dheight = PI_GetWidgetGeometryChange(inParam2)  
  
    return 0
```

```
key, flags, vkey = PI_GetKeyState(inParam1)
```

Example

```
def EditWidgetHandler (self, inMessage, inWidget, inParam1, inParam2):  
    if (inMessage == xpMsg_KeyPress):  
        key, flags, vkey = PI_GetKeyState(inParam1)  
  
    return 0
```

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Python Interface for Plugin SDK

PythonScriptMessaging Module (Unique to the PythonInterface)

To use this module add the text below at the start of the PythonInterface script.

```
from PythonScriptMessaging import *
```

```
NumberOfScripts = PI_CountScripts()
```

```
ScriptId = PI_GetNthScript(inIndex)
```

```
ScriptId = PI_FindScriptBySignature(inSignature)
```

```
PI_GetScriptInfo(ScriptId, outName, outSignature, outDescription)
```

```
EnableStatus = PI_IsScriptEnabled(inScriptId)
```

```
EnableStatus = PI_EnableScript(inScriptId)
```

```
PI_DisableScript(inScriptId)
```

```
PI_SendMessageToScript(self, inScriptId, inMessage, inParam)
```

Pass in None instead of inScriptId to send to all scripts.

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Python Interface for Plugin SDK

SandyBarbourUtilities Module (Unique to the PythonInterface)

To use this module add the text below at the start of the PythonInterface script.

```
from SandyBarbourUtilities import *
```

This module will send text to various areas.
It also redirects stdout and stderr.

In windows, if you use my standalone Python Interface Plugin Console app, the text will be displayed there as well.
This is good for debugging startup problems.

In linux it will be written to the terminal.

On the mac there is only the plugin control panel at the moment.

SandyBarbourDisplay()

This will send text to the top widget listbox in the python interface control panel.

SandyBarbourClearDisplay()

This will clear the text in the top widget listbox in the python interface control panel.

SandyBarbourPrint()

This will send text to the bottom widget listbox in the python interface control panel.

SandyBarbourClearPrint()

This will clear the text in the bottom widget listbox in the python interface control panel.

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Python Interface for Plugin SDK

SandyBarbourVCUtilities Module (Unique to the PythonInterface and the VirtualCamera Plugin)

To use this module add the text below at the start of the PythonInterface script.

```
from SandyBarbourVCUtilities import *
```

This module allows access to my VirtualCamera plugin.
The main purpose is so that a python script can be used to orchestrate camera sequences.
I wanted to add scripting to my VirtualCamera plugin, what better way to do it than use
my existing PythonInterface.

CameraPluginReady = VC_CameraPluginReady()

Because of the way our plugin SDK starts up, you can't be sure if another plugin is in a
ready state.

So use this to determine when the Virtual Camera plugin is ready.

VC_AcquireCamera()

This will allow the script to use the Virtual Camera.
This does the same as pressing the Start Button in the VC plugin.

VC_ReleaseCamera()

Call this when the script has finished with the Virtual Camera.
This does the same as pressing the Stop Button in the VC plugin.

VC_SetCamera()

Camera types like TOWER etc require this to be called to load the tower position into the
camera data.

This does the same as pressing the Select Button in the VC plugin.

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Python Interface for Plugin SDK

CameraIndex = VC_GetCameraIndex()

Get index of current camera.

CameraTypeIndex = VC_GetCameraTypeIndex()

Get current camera type index.

XOffset = VC_GetXOffset()

Get current camera X Offset.

YOffset = VC_GetYOffset()

Get current camera Y Offset.

ZOffset = VC_GetZOffset()

Get current camera Z Offset.

HeadingOffset = VC_GetHeadingOffset()

Get current camera Heading Offset.

PitchOffset = VC_GetPitchOffset()

Get current camera Pitch Offset.

RollOffset = VC_GetRollOffset()

Get current camera Roll Offset.

ZoomRatio = VC_GetZoomRatio()

Get current camera Zoom Ratio.

LookAt = VC_GetLookAtAircraft()

Get current aircraft that is being looked at.

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Python Interface for Plugin SDK

VC_SetCameraIndex(CameraIndex)

Sets the current camera to CameraIndex.

VC_SetCameraTypeIndex(CameraTypeIndex)

Sets the current camera type to CameraTypeIndex.

VC_SetXOffset(XOffset)

Sets the current camera XOffset.

VC_SetYOffset(YOffset)

Sets the current camera YOffset.

VC_SetZOffset(ZOffset)

Sets the current camera ZOffset.

VC_SetHeadingOffset(HeadingOffset)

Sets the current camera HeadingOffset.

VC_SetPitchOffset(PitchOffset)

Sets the current camera PitchOffset.

VC_SetRollOffset(RollOffset)

Sets the current camera RollOffset.

VC_SetZoomRatio(ZoomRatio)

Sets the current camera ZoomRatio.

VC_SetLookAtAircraft(LookAt)

Sets the current aircraft that the camera will follow..

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Python Interface for Plugin SDK

Refer to these enums when using VC_GetCameraTypeIndex() and VC_SetCameraTypeIndex(CameraTypeIndex)

0	NOT_SET
1	TOWER
2	RUNWAY
3	CHASE
4	FREE1
5	FREE2
6	SPOT
7	FULLSCREEN1
8	FULLSCREEN2
9	AIRCRAFT0
10	AIRCRAFT1
11	AIRCRAFT2
12	AIRCRAFT3
13	AIRCRAFT4
14	AIRCRAFT5
15	AIRCRAFT6
16	AIRCRAFT7
17	AIRCRAFT8
18	AIRCRAFT9

Refer to these enums when using VC_GetLookAtAircraft() and VC_SetLookAtAircraft(LookAt)

0	NOT_SET
1	AIRCRAFT0
2	AIRCRAFT1
3	AIRCRAFT2
4	AIRCRAFT3
5	AIRCRAFT4
6	AIRCRAFT5
7	AIRCRAFT6
8	AIRCRAFT7
9	AIRCRAFT8
10	AIRCRAFT9

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