Controlling Prospa or Spinsolve Expert with Python

V3.90 of Prospa supports the data-copy Windows message. This allows other programs running on the same computer to control Prospa by passing command strings. The only requirement is that the program must support Windows messaging. Python provides this functionality with the pywin32 libraries.

Following is the code required to control Prospa remotely

import win32con, win32api, win32gui, win32ui

import ctypes, ctypes.wintypes

import subprocess, time,os

# Defines data structure used to pass information between Python and Prospa

class COPYDATASTRUCT(ctypes.Structure):

\_fields\_ = [

('dwData', ctypes.wintypes.LPARAM), # User define parameter

('cbData', ctypes.wintypes.DWORD), # Size of string

('lpData', ctypes.c\_char\_p) # String containing data

]

PCOPYDATASTRUCT = ctypes.POINTER(COPYDATASTRUCT)

# A class allowing communications between Python and Prospa

class Comms:

# Defines an invisible win32 window to receive and send messages

def \_\_init\_\_(self, dstWin):

message\_map = {win32con.WM\_COPYDATA: self.OnUser}

wc = win32gui.WNDCLASS()

wc.lpfnWndProc = message\_map

wc.lpszClassName = 'MyWindowClass'

hinst = wc.hInstance = win32api.GetModuleHandle(None)

classAtom = win32gui.RegisterClass(wc)

self.hwnd = win32gui.CreateWindow (classAtom,"Python win32gui",0,0,0,

win32con.CW\_USEDEFAULT,win32con.CW\_USEDEFAULT,0,0,hinst,None)

self.returnMessage = 'init'

self.prospaWin = dstWin

# Detect a message coming back from Prospa

def OnUser(self, hwnd, msg, wparam, lparam):

pCDS = ctypes.cast(lparam, PCOPYDATASTRUCT)

self.returnMessage = ctypes.string\_at(pCDS.contents.lpData)

return 1

# Run a macro or command in Prospa by sending the text as a message

def RunProspaMacro(self, macro\_str):

pywnd = win32ui.CreateWindowFromHandle(self.prospaWin)

cds = COPYDATASTRUCT()

cds.dwData = 1

cds.cbData = ctypes.sizeof(ctypes.create\_string\_buffer(macro\_str))

cds.lpData = ctypes.c\_char\_p(macro\_str)

lParam = PCOPYDATASTRUCT.from\_address(ctypes.addressof(cds))

pywnd.SendMessage(win32con.WM\_COPYDATA, self.hwnd, lParam)