'Test Condition: Put the export destination folder on your desktop and empty it. i.e., Desktop\ProjectExport\Export

'Test Condition: Kill "DLOClientu.exe" from task manager to prevent memory leak

'Test Condition: Leave "PH\_3D" and "FH\_3D" series the last to run, since after they run close workstation will trigger the server computer to reboot

Sub Main()

'Import data from the Export.xls's

Dim SheetName As String

Dim LRowCount As Integer

Dim LColumnCount As Integer

Dim ERowCount As Integer

Dim EColumnCount As Integer

Dim FRowCount As Integer

Dim FColumnCount As Integer

Dim LoadData() As String 'Dynamic array stores the data from "Load" sheet

Dim ExportData() As String 'Dynamic array stores the data from "Export" sheet

Dim FileTypeData() As String 'Dynamic array stores the data from "Export" sheet

'Import data from "Load" sheet

SheetName = "Load"

LRowCount = Function\_ExcelSheetRowCount.ExcelSheetRowCount(ExcelFilePath\_Export, SheetName)

LColumnCount = Function\_ExcelSheetColumnCount.ExcelSheetColumnCount(ExcelFilePath\_Export, SheetName)

ReDim LoadData(1 To LRowCount, 1 To LColumnCount) As String 'Array is sized dynamically

LoadData() = Function\_GetExcelSheetData.GetExcelSheetData(ExcelFilePath\_Export, SheetName)

'Import data from "Export" sheet

SheetName = "Export"

ERowCount = Function\_ExcelSheetRowCount.ExcelSheetRowCount(ExcelFilePath\_Export, SheetName)

EColumnCount = Function\_ExcelSheetColumnCount.ExcelSheetColumnCount(ExcelFilePath\_Export, SheetName)

ReDim ExportData(1 To ERowCount, 1 To EColumnCount) As String 'Array is sized dynamically

ExportData() = Function\_GetExcelSheetData.GetExcelSheetData(ExcelFilePath\_Export, SheetName)

'Import data from "FileType" sheet

SheetName = "FileType"

FRowCount = Function\_ExcelSheetRowCount.ExcelSheetRowCount(ExcelFilePath\_Export, SheetName)

FColumnCount = Function\_ExcelSheetColumnCount.ExcelSheetColumnCount(ExcelFilePath\_Export, SheetName)

ReDim FileTypeData(1 To FRowCount, 1 To FColumnCount) As String 'Array is sized dynamically

FileTypeData() = Function\_GetExcelSheetData.GetExcelSheetData(ExcelFilePath\_Export, SheetName)

'For "Load" sheet

Dim Study As String 'Study names

Dim Series As String 'Series names

Dim Image As String 'Image names

Dim RFOverlay As String 'Display RF Overlay or not

Dim PhysioView As String 'Display Physio or not

Dim DateTime As String 'Show DATA/TIME on image header or not

Dim Measurement As String 'Show Measurements or not

Dim Annotation As String 'Show Annotations or not

Dim ExportButton As String 'which Export Button to use

Dim i As Integer 'row number in the "Load" sheet

Dim Count As Integer

'For "Export" sheet

Dim EStudy As String

Dim ESeries As String

Dim EImage As String

Dim ExportType As String 'ExportType

Dim FileType As String 'FileType

Dim HideMA As String 'Hide Measurement and Annotation or not

Dim Quality As String 'Export Quality

Dim ExportRegion As String 'Export Regions or not

Dim RowNo As String 'the row# of the sheet

Dim m As Integer 'row number in the "Export" sheet

Dim Begin As Integer 'first row number in the "Export" sheet for this image

Dim Finish As Integer 'last row number in the "Export" sheet for this image

'For "FileType" sheet

Dim FFileType As String 'shortened File Type

Dim k As Integer 'row number in the "FileType" sheet

'Open Vevo2100 workstation

ProgramManagerWindow("Application=EXPLORER.EXE Caption='Program Manager'").Attach

ListView("Index=1").Select "Vevo 2100", tpMouseDoubleClick

'In Pref - General, select Biggest Frame and Specturm layouts

Pause 10, tpPauseSeconds 'Pause 10 seconds to wait for the workstation to open

Window(Vevo).Attach

Button("Caption=&Prefs").Click

TabControl("Parent.Caption=Preferences").Select " Mode Settings "

RadioButton("Caption='' Index=2").Click

RadioButton("Caption='' Index=3").Click

Button("Caption=OK").Click

'From Study Browser, load Images from correct Study and Series

For i = 2 To LRowCount 'First Line is Header Line

Study = LoadData(i, 1)

Series = LoadData(i, 2)

Image = LoadData(i, 3)

RFOverlay = LoadData(i, 4)

PhysioView = LoadData(i, 5)

DateTime = LoadData(i, 6)

Measurement = LoadData(i, 7)

Annotation = LoadData(i, 8)

ExportButton = LoadData(i, 9)

'Close and Reopen workstation after finish exporting each Series (inorder to release memory)

If i > 2 Then

If LoadData(i, 2) <> LoadData(i - 1, 2) And LoadData(i, 2) <> "FH\_3D" Then

Window.Close

Pause 3, tpPauseSeconds 'Pause 3 seconds

ProgramManagerWindow("Application=EXPLORER.EXE Caption='Program Manager'").Attach

ListView("Index=1").Select "Vevo 2100", tpMouseDoubleClick

End If

End If

'Initialize Begin and Finish positions

Begin = 0

Finish = 0

JumpC:

'Attach to VisualSonics Vevo 2100

Pause 10, tpPauseSeconds 'Pause 10 seconds to wait for the workstation to open

Window(Vevo).Attach

'Expand the Study in the Study Browser

On Error GoTo ErrorHandlerB

'If can not find the Series, then the Study needs to be expanded

If ListView("Parent.Caption='Study Browser'").FindItem(Series) = 0 Then

On Error GoTo ErrorHandlerA

ListView("Parent.Caption='Study Browser'").Select (Study), tpMouseDoubleClick

End If

'Expand the Series in the Study Browser

On Error GoTo ErrorHandlerB

'If the mode column (i.e., the 6th column in the "Study Browser") of the row after Series is empty

'then the row is either a Series or a Study

'the Series needs to be expanded to see all the Images

Count = ListView("Parent.Caption='Study Browser'").FindItem(Series)

If ListView("Parent.Caption='Study Browser'").GetItem(Count + 1, 6) = "" Then

On Error GoTo ErrorHandlerB

ListView("Parent.Caption='Study Browser'").Select (Series), tpMouseDoubleClick

End If

'Load the Image from Study Browser

'Search to load the Image in between the Series and next Series/Study

Do While ListView("Parent.Caption='Study Browser'").GetItem(Count + 1, 6) <> ""

If ListView("Parent.Caption='Study Browser'").GetItem(Count + 1, 6) = Image Then

ListView("Parent.Caption='Study Browser'").SelectIndex (Count + 1), tpMouseDoubleClick

Exit Do

Else

Count = Count + 1

End If

Loop

'Wait for the Image to be loaded in the Mode window

If i = 2 Then

Pause 10, tpPauseSeconds 'Pause 10 seconds to wait for the first image of the series to open

ElseIf i > 2 Then

If LoadData(i, 2) <> LoadData(i - 1, 2) Then

Pause 10, tpPauseSeconds 'Pause 10 seconds to wait for the first image of the series to open

Else

Pause 3, tpPauseSeconds 'Pause 3 seconds to wait for the image to open

End If

End If

'In the Mode Window, stop playback and move to the first frame

'For Frames and 3D image (3D view), we do not need to stop playback

If Button("Caption=Forw", tpAttachNoWait).Exists = True Then

'Linear Contrast Mode loop in "Sub Range Series" has longer load time

If (Series = "FH\_Sub Range" Or Series = "PH\_Sub Range") And Image = "Linear Contrast Mode" Then

Pause 3, tpPauseSeconds

End If

Button("Caption=Forw").Click 'Stop PlayBack

Button("Caption=Home").Click 'Move to first frame

End If

'Set the parameter as per the "Load" sheet

'Set the "RF Overlay" Status in the Image Processing side panel

If RFOverlay <> "NA" Then

Button("Caption=PostProc").Click 'Open the Image Processing side panel

If (RFOverlay = "Enable" And CheckBox("Caption='RF Overlay'").Checked = 0) Or (RFOverlay = "Disable" And CheckBox("Caption='RF Overlay'").Checked = 1) Then

CheckBox("Caption='RF Overlay'").Click

End If

End If

'Set the "View Physiology" Status in the Physio side panel

If PhysioView <> "NA" Then

Button("Caption=Physio").Click 'Open the Physio side panel

If (PhysioView = "Enable" And CheckBox("Caption='View Physiology'").Checked = 0) Or (PhysioView = "Disable" And CheckBox("Caption='View Physiology'").Checked = 1) Then

CheckBox("Caption='View Physiology'").Click

End If

If CheckBox("Caption='View Physiology'").Checked = 1 Then 'When "View Physiology" is enabled

If CheckBox("Parent.Caption=ModeRootView Index=2").Checked = 0 Then

CheckBox("Parent.Caption=ModeRootView Index=2").Click 'Make sure ECG is checked

End If

If CheckBox("Parent.Caption=ModeRootView Index=3").Checked = 0 Then

CheckBox("Parent.Caption=ModeRootView Index=3").Click 'Make sure Respiration is checked

End If

If CheckBox("Parent.Caption=ModeRootView Index=4").Checked = 1 Then

CheckBox("Parent.Caption=ModeRootView Index=4").Click 'Make sure Invert is NOT checked

End If

If CheckBox("Parent.Caption=ModeRootView Index=5").Checked = 0 Then

CheckBox("Parent.Caption=ModeRootView Index=5").Click 'Make sure BP is checked

End If

If CheckBox("Parent.Caption=ModeRootView Index=6").Checked = 0 Then

CheckBox("Parent.Caption=ModeRootView Index=6").Click 'Make sure BP Derivative is checked

End If

If CheckBox("Parent.Caption=ModeRootView Index=7").Checked = 0 Then

CheckBox("Parent.Caption=ModeRootView Index=7").Click 'Make sure Temp is checked

End If

End If

End If

'Set the "Show Date/Time on Image Header" Status in the Preference panel - General tab

On Error GoTo ErrorHandlerE

Button("Caption=Prefs").Click 'Open the Preference panel

JumpD:

Window(Vevo).Attach

TabControl("Parent.Caption=Preferences").Select " General " 'Open the General tab

If (DateTime = "Enable" And CheckBox("Caption='Show Date/Time on Image Header'").Checked = 0) Or (DateTime = "Disable" And CheckBox("Caption='Show Date/Time on Image Header'").Checked = 1) Then

CheckBox("Caption='Show Date/Time on Image Header'").Click

End If

Button("Caption=OK").Click 'close Preference panel

'Set the "Show Measurements" Status in the Preference panel - Measurement tab

On Error GoTo ErrorHandlerF

If Measurement <> "NA" Then

Button("Caption=Prefs").Click 'Open the Preference panel

JumpE:

Window(Vevo).Attach

TabControl("Parent.Caption=Preferences").Select " Measurement " 'Open the Measurement tab

If (Measurement = "Enable" And CheckBox("Caption='Show Measurements'").Checked = 0) Or (Measurement = "Disable" And CheckBox("Caption='Show Measurements'").Checked = 1) Then

CheckBox("Caption='Show Measurements'").Click

'Save the new measurement package as "Export Measurement Package"

Button("Caption='Save As'").Click

Window("New Measurement Package Window").Attach

EditBox("Index=1").SetText "Export Measurement Package"

Button("Caption=OK").Click

Pause 3, tpPauseSeconds

'Overwrite the existing "Export Measurement Package" measurement package

Window("Package Exists Window").Attach

Button("Caption=&Yes").Click

Pause 10, tpPauseSeconds

End If

'Close the Preference panel

Window(Vevo).Attach

Button("Caption=OK").Click

End If

'Set the "Show Annotations" Status in the Preference panel - Annotation tab

On Error GoTo ErrorHandlerG

If Annotation <> "NA" Then

Button("Caption=Prefs").Click 'Open the Preference panel

JumpF:

Window(Vevo).Attach

TabControl("Parent.Caption=Preferences").Select " Annotation " 'Open the Annotation tab

If (Annotation = "Enable" And CheckBox("Caption='Show Annotations'").Checked = 0) Or (Annotation = "Disable" And CheckBox("Caption='Show Annotations'").Checked = 1) Then

CheckBox("Caption='Show Annotations'").Click

'Save the new measurement package as "Export Measurement Package"

Button("Caption='Save As'").Click

Window("New Measurement Package Window").Attach

EditBox("Index=1").SetText "Export Measurement Package"

Button("Caption=OK").Click

Pause 3, tpPauseSeconds

'Overwrite the existing "Export Measurement Package" measurement package

Window("Package Exists Window").Attach

Button("Caption=&Yes").Click

Pause 10, tpPauseSeconds

End If

'Close the Preference panel

Window(Vevo).Attach

Button("Caption=OK").Click

End If

'Set the parameter as per the "Export" sheet

For m = 2 To ERowCount 'First Line is Header Line

EStudy = ExportData(m, 1)

ESeries = ExportData(m, 2)

EImage = ExportData(m, 3)

'Find the first and last row for this image in the "Export" sheet

If EStudy = Study And ESeries = Series And EImage = Image Then

If Begin = 0 Then

Begin = m

End If

If Finish < m Then

Finish = m

End If

End If

Next

'For this image

For m = Begin To Finish

EStudy = ExportData(m, 1)

ESeries = ExportData(m, 2)

EImage = ExportData(m, 3)

ExportType = ExportData(m, 4)

FileType = ExportData(m, 5)

HideMA = ExportData(m, 6)

Quality = ExportData(m, 7)

ExportRegion = ExportData(m, 8)

RowNo = ExportData(m, 9)

'Open the "Export Image" browser

Window(Vevo).Attach

If ExportButton = "Image Area" Then

Button("Caption=Export").Click 'Export from Mode window

ElseIf ExportButton = "Study Browser" Then

If m = Begin Then

'switch to Study Browser

Button("Caption=S").Click

End If

Button("Caption=&Export").Click 'Export from Study browser

End If

'In the "Export Image" browser, select "Export Type"

If ExportType = "Cine Loop" Then

RadioButton("Caption='&" & ExportType & "'").Click

Else

RadioButton("Caption=&" & ExportType).Click

End If

'In the "Export Image" browser, select export destination folder

TreeView("Parent.Caption='Export Image'").SelectItem "\Desktop\ProjectExport"

'In the "Export Image" browser, set export file name in "Save As" Edit box

'Get the shortened FileType name, i.e., FFileType, from "FileType" sheet, which will be used as part of the export file name

For k = 2 To FRowCount 'First Line is Header Line

If FileType = FileTypeData(k, 1) Then

FFileType = FileTypeData(k, 2)

End If

Next

'export file name should not contain any space due to a requirement for "TIFF for 3D Volume Slices" format

EditBox("Label='Save As'").SetText "\Export\row" & RowNo & "\_\_" & Replace(Study, " ", "\_") & "\_\_" & Replace(Series, " ", "\_") & "\_\_" & Replace(Image, " ", "\_") & "\_\_" & Replace(ExportType, " ", "\_") & "\_\_" & FFileType

'In the "Export Image" browser, choose "File Type"

ComboBox("Label='File Type'").Select FileType

'In the "Export Image" browser, check "Hide measurements and annotations" or not

If FFileType <> "Audio" And FFileType <> "IQ" And FFileType <> "RF" And FFileType <> "RAW" And FFileType <> "TIFF3D" Then

If (HideMA = "Enable" And CheckBox("Caption='Hide measurements and annotations'").Checked = 0) Or (HideMA = "Disable" And CheckBox("Caption='Hide measurements and annotations'").Checked = 1) Then

CheckBox("Caption='Hide measurements and annotations'").Click

End If

End If

'In the "Export Image" browser, select "Quality" (only apply to Cine Loop)

If ExportType = "Cine Loop" And FFileType <> "Audio" And FFileType <> "IQ" And FFileType <> "RF" And FFileType <> "RAW" Then

RadioButton("Caption=" & Quality).Click

End If

'In the "Export Image" browser, select "Export Regions" (only apply to DICOM)

If ExportType = "DICOM" Then

If (ExportRegion = "Enable" And CheckBox("Caption='Export regions'").Checked = 0) Or (ExportRegion = "Disable" And CheckBox("Caption='Export regions'").Checked = 1) Then

CheckBox("Caption='Export regions'").Click

End If

End If

'In the "Export Image" browser, click [OK] button to export

Button("Caption=OK").Click

Pause 3, tpPauseSeconds

'Handle the "Export Image (Overwrite) Window"

On Error GoTo ErrorHandlerC

'If the same named export file already exists then overwrite

If Window("Export Image Window", tpAttachNoWait).Exists = True Then

Window("Export Image Window").Attach

Button("Caption=&Yes").Click

Pause 3, tpPauseSeconds

End If

JumpB:

'Handle the "Image Export Report Window"

On Error GoTo ErrorHandlerD

Window(Vevo).Attach

'wait up to 10 mins for the "Image Export Report Window" to pop up

If Wait(600, "Image Export Report Window Exists", tpWaitSeconds) = True Then

Window("Image Export Report Window").Attach

If InStr(1, ListView("Index=1").CaptureText, "successfully exported") Then

UserCheck "ExportReport", True, "row" & RowNo & "\_\_The " & EImage & " Image from Study = " & EStudy & " & Series = " & ESeries & " is successfully exported to " & FileType & " (" & ExportType & ") format."

Else

UserCheck "ExportReport", False, "row" & RowNo & "\_\_The " & EImage & " Image from Study = " & EStudy & " & Series = " & ESeries & " is failed to exported to " & FileType & " (" & ExportType & ") format."

End If

Button("Caption=OK").Click 'Close the "Image Export Report Window"

Pause 3, tpPauseSeconds

End If

Next 'Next row in the "Export" sheet for this image

'Switch back to Study browser (if needed) to be able to load next image

Window(Vevo).Attach

If ExportButton = "Image Area" Then

Button("Caption=S").Click 'Switch to Study Browser

End If

JumpA:

Next 'Next row in the "Load" sheet

'Close application to reset its original state

Window.Close

'Erase arrays

Erase LoadData

Erase ExportData

Erase FileTypeData

Exit Sub

'"System Error Window" may pop up when the virtual memory usage for the workstation is higher than 1.5GB.

'The memory leak is caused by Testpartner not the workstation.

ErrorHandlerA:

Window(Vevo).Attach

If Window("System Error Window", tpAttachNoWait).Exists = True Then

UserCheck "SystemError", False, "A system error poped up after export " & EImage & " Image from Study = " & EStudy & " & Series = " & ESeries & " to " & FileType & " (" & ExportType & ") format."

'Close and Reopen workstation to release memory

Window.Close

Pause 3, tpPauseSeconds

ProgramManagerWindow("Application=EXPLORER.EXE Caption='Program Manager'").Attach

ListView("Index=1").Select "Vevo 2100", tpMouseDoubleClick

'after reopen the workstation, restart export from the m row of the "Export" sheet

Begin = m

Resume JumpC

Else

UserCheck "CanNotFindStudy", False, "The " & LoadData(i, 1) & " does NOT exist in the Study Browser. (Series = " & LoadData(i, 2) & "& Image = " & LoadData(i, 3) & ")"

Resume JumpA

End If

ErrorHandlerB:

Window(Vevo).Attach

If Window("System Error Window", tpAttachNoWait).Exists = True Then

UserCheck "SystemError", False, "A system error poped up after export " & EImage & " Image from Study = " & EStudy & " & Series = " & ESeries & " to " & FileType & " (" & ExportType & ") format."

'Close and Reopen workstation to release memory

Window.Close

Pause 3, tpPauseSeconds

ProgramManagerWindow("Application=EXPLORER.EXE Caption='Program Manager'").Attach

ListView("Index=1").Select "Vevo 2100", tpMouseDoubleClick

'after reopen the workstation, restart export from the m row of the "Export" sheet

Begin = m

Resume JumpC

Else

UserCheck "CanNotFindSeries", False, "The " & LoadData(i, 1) & "\" & LoadData(i, 2) & " does NOT exist in the Study Browser. (Image = " & LoadData(i, 3) & ")"

Resume JumpA

End If

ErrorHandlerC:

'"Image Export Report Window" pop up before TestPartner move to line "If Window("Export Image Window", tpAttachNoWait).Exists = True Then"

Resume JumpB

ErrorHandlerD:

Window(Vevo).Attach

If Window("System Error Window", tpAttachNoWait).Exists = True Then

UserCheck "SystemError", False, "A system error poped up when exporting " & EImage & " Image from Study = " & EStudy & " & Series = " & ESeries & " to " & FileType & " (" & ExportType & ") format."

Else

UserCheck "ImageExportReportWindow", False, "Can not identify the list view inside Image Export Report Window properly when " & EImage & " Image from Study = " & EStudy & " & Series = " & ESeries & " is exported to " & FileType & " (" & ExportType & ") format."

End If

'Close and Reopen workstation to release memory

Window.Close

Pause 3, tpPauseSeconds

ProgramManagerWindow("Application=EXPLORER.EXE Caption='Program Manager'").Attach

ListView("Index=1").Select "Vevo 2100", tpMouseDoubleClick

'after reopen the workstation, restart export from the m row of the "Export" sheet

Begin = m

Resume JumpC

ErrorHandlerE:

'In case the preference panel opens very slowly

Pause 3, tpPauseSeconds

Resume JumpD

ErrorHandlerF:

'In case the preference panel opens very slowly

Pause 3, tpPauseSeconds

Resume JumpE

ErrorHandlerG:

'In case the preference panel opens very slowly

Pause 3, tpPauseSeconds

Resume JumpF

End Sub