Software Design Notes

# Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| Rev. | Revision Notes | DCN | Date |
| 1 | Initial Release. | N/A | 24SEP2021 |
| 2 |  |  |  |

# Introduction

## Purpose

This document presents software design notes for VBA code that logs a form and saves the form as a PDF.

This software is intended to automatically log and file the Ultrasound Transducer Test Form, FRM.100-003 when the form is printed.

## Scope

This document applies to the VBA subroutine(s) listed in Table 1 – VBA Form Submission Subroutine.

Table 1 – VBA Form Submission Subroutine

|  |  |
| --- | --- |
| **Subroutine** | **Description** |
| Document\_Open() | * Runs when the form document is opened. * Located in ThisDocument.cls |
| Register\_Event\_Handler() | * Runs when called. * Located in Reg\_Event\_Handler.bas * Creates an instance of the Word Application object so that application events can be used. |
| wordApp\_DocumentBeforePrint() | * Runs when DocumentBeforePrint application event is triggered. * Located in EventClassModule.cls * Logs and creates PDF of form. |

## References

### Files

|  |  |
| --- | --- |
| **File** | **Location** |
| Form | C:\Repos\Software\Bexar VBA\BexarVBA\100\003 Ultrasound Transducer Test Form |
| Log | C:\Repos\Software\Bexar VBA\BexarVBA\100\003 Ultrasound Transducer Test Form\data |
| PDFs | C:\Repos\Software\Bexar VBA\BexarVBA\100\003 Ultrasound Transducer Test Form\pdfs |
| VBA | https://github.com/nolan210/BexarVBA.git |

# Software Specification Requirements

#### SSR1 – Usability

No text (title)

#### SSR1.1

Published in a Word Macro Enabled Document.

#### SSR1.2

Accesses and saves files on a local file server.

#### SSR1.3

Does not require the document user to save the Word document.

#### SSR1.4

All logging and PDF saving functionality is accomplished automatically, without user input, before the document is printed.

#### SSR2 – Functionality

No text (title)

#### SSR2.1

VBA Project (title)

#### SSR2.1.1

Protect the VBA source code with the password in Table 2 – VBA Protection Password.

Table 2 – VBA Protection Password

|  |  |
| --- | --- |
| **Password** | 9hvmq6KchrZ+V&&j |

#### SSR2.2

Log Data (title)

#### SSR2.2.1

Log the date and time at print event in the Excel file.

#### SSR2.2.2

Log the username of account logged into computer at print event in the Excel file.

#### SSR2.2.3

Log the computer ID at print event in the Excel file.

#### SSR2.2.4

Log the form data in the Excel file.

#### SSR2.3

Excel File (title)

#### SSR2.3.1

Excel file with a log sheet at the file location in Table 3 – Excel File Location.

Table – Excel File Location

|  |  |
| --- | --- |
| **File Location** | C:\Repos\Software\Bexar VBA\BexarVBA\100\003 Ultrasound Transducer Test Form\data\Log.xlsx |

#### SSR2.3.2

Protect the Excel file’s data sheet with the password in Table 4 – Excel Sheet Protection Password.

Table 4 – Excel Sheet Protection Password

|  |  |
| --- | --- |
| **Password** | WT$?@L&x=F5qYfC# |

#### SSR2.4

PDFs (title)

#### SSR2.4.1

Save PDF of the form being printed according to details in Table 5 – Print PDF Details.

Table 5 – Print PDF Details

|  |  |
| --- | --- |
| **File Location** | C:\Repos\Software\Bexar VBA\BexarVBA\100\003 Ultrasound Transducer Test Form\data\pdfs\ |
| **File Name** | YYYYMMDDHHMMSS\_username.pdf |

# Source Code

Table 6 – ThisDocument.cls VBA Source Code

|  |
| --- |
| VERSION 1.0 CLASS  BEGIN  MultiUse = -1 'True  END  Attribute VB\_Name = "ThisDocument"  Attribute VB\_GlobalNameSpace = False  Attribute VB\_Creatable = False  Attribute VB\_PredeclaredId = True  Attribute VB\_Exposed = True  Private Sub Document\_Open()  Register\_Event\_Handler  End Sub |

Table 7 – Reg\_Event\_Handler.bas VBA Source Code

|  |
| --- |
| Attribute VB\_Name = "Reg\_Event\_Handler"  Dim x As New EventClassModule  Sub Register\_Event\_Handler()  Set x.wordApp = Word.Application  End Sub |

Table 8 – EventClassModule.cls VBA Source Code

|  |
| --- |
| 'Nolan Manteufel  'Bexar VBA  'Document No. 100.003  'Document Rev. 00  '15SEP2020  'VBA Password = 9hvmq6KchrZ+V&&j  'Used to move documents  Private Const PDF\_FILEPATH As String = "C:\Repos\Software\Bexar VBA\BexarVBA\100\003 Ultrasound Transducer Test Form\data\pdfs\"  Private Const LOG\_FILEPATHNAME As String = "C:\Repos\Software\Bexar VBA\BexarVBA\100\003 Ultrasound Transducer Test Form\data\Log.xlsx"  Private Const LOG\_PASSWORD As String = "Z45KUWkf37Drdy\*2"  'Used to access CC form fields  Private Const ccSN = "ccSN"  Private Const ccCondition = "ccCondition"  Private Const ccTester = "ccTester"  Private Const ccUC = "ccUC"  Private Const ccTicket = "ccTicket"  Private Const ccIssue = "ccIssue"  Private Const ccT1OpMode = "ccT1OpMode"  Private Const ccT1Param = "ccT1Param"  Private Const ccT1Start = "ccT1Start"  Private Const ccT1Stop = "ccT1Stop"  Private Const ccT1Marker = "ccT1Marker"  Private Const ccT2OpMode = "ccT2OpMode"  Private Const ccT2Frequency = "ccT2Frequency"  Private Const ccYmax = "ccYmax"  Private Const ccYmin = "ccYmin"  Private Const ccMarkerReading = "ccMarkerReading"  Private Const ccVSWR = "ccVSWR"  Private Const ccConclusion = "ccConclusion"  'Used to access CC document stamps  Private Const ccUser = "ccUser"  Private Const ccComputer = "ccComputer"  Private Const ccDatetime = "ccDatetime"  Private Const NUMBER\_OF\_DATA\_FIELDS = 21  'Used to access data array and determine data locations in log  Enum formInputEnums  iUser  iComputer  iDatetime  iSN  iCondition  iTester  iUC  iTicket  iIssue  iT1OpMode  iT1Param  iT1Start  iT1Stop  iT1Marker  iT2OpMode  iT2Frequency  iYmax  iYmin  iMarkerReading  iVSWR  iConclusion  iPDF  End Enum  Public WithEvents wordApp As Word.Application  Private Sub wordApp\_DocumentBeforePrint(ByVal Doc As Document, Cancel As Boolean)  'Nolan Manteufel  '15SEP2020  'Logs the form in LOG\_FILEPATHNAME excel file.  'Protects the LOG\_FILEPATHNAME excel file with LOG\_PASSWORD.  'Saves PDF of form in PDF\_FILEPATH folder.  'Exit if error  On Error GoTo ErrHandler  'Variables  Dim formDoc As Document  Set formDoc = ActiveDocument  Dim cc As ContentControls  Dim excelApp As Excel.Application  Dim logWB As Excel.Workbook  Dim logSheet As Excel.Worksheet  'User  Dim formUser As String  formUser = Environ$("username")  formUser = LCase(formUser)  'Computer  Dim formComputer As String  formComputer = Environ$("computername")  formComputer = LCase(formComputer)  'Datetime  Dim dateTime As String  Dim timeOnly As String  timeOnly = Format(Time, "hhmmss")  dateTime = Format(Date, "yyyymmdd")  dateTime = dateTime & timeOnly  'Inputs array  Dim formInputs(NUMBER\_OF\_DATA\_FIELDS) As String  Dim dataColumnIndex As Integer  'Populate metadata  formInputs(iUser) = formUser  formInputs(iComputer) = formComputer  formInputs(iDatetime) = dateTime  'Populate data  formInputs(iSN) = formDoc.SelectContentControlsByTag(ccSN)(1).Range.Text  formInputs(iCondition) = formDoc.SelectContentControlsByTag(ccCondition)(1).Range.Text  formInputs(iTester) = formDoc.SelectContentControlsByTag(ccTester)(1).Range.Text  formInputs(iUC) = formDoc.SelectContentControlsByTag(ccUC)(1).Range.Text  formInputs(iTicket) = formDoc.SelectContentControlsByTag(ccTicket)(1).Range.Text  formInputs(iIssue) = formDoc.SelectContentControlsByTag(ccIssue)(1).Range.Text  formInputs(iT1OpMode) = formDoc.SelectContentControlsByTag(ccT1OpMode)(1).Range.Text  formInputs(iT1Param) = formDoc.SelectContentControlsByTag(ccT1Param)(1).Range.Text  formInputs(iT1Start) = formDoc.SelectContentControlsByTag(ccT1Start)(1).Range.Text  formInputs(iT1Stop) = formDoc.SelectContentControlsByTag(ccT1Stop)(1).Range.Text  formInputs(iT1Marker) = formDoc.SelectContentControlsByTag(ccT1Marker)(1).Range.Text  formInputs(iT2OpMode) = formDoc.SelectContentControlsByTag(ccT2OpMode)(1).Range.Text  formInputs(iT2Frequency) = formDoc.SelectContentControlsByTag(ccT2Frequency)(1).Range.Text  formInputs(iYmax) = formDoc.SelectContentControlsByTag(ccYmax)(1).Range.Text  formInputs(iYmin) = formDoc.SelectContentControlsByTag(ccYmin)(1).Range.Text  formInputs(iMarkerReading) = formDoc.SelectContentControlsByTag(ccMarkerReading)(1).Range.Text  formInputs(iVSWR) = formDoc.SelectContentControlsByTag(ccVSWR)(1).Range.Text  'formInputs(iConclusion) left empty  formInputs(iPDF) = PDF\_FILEPATH & dateTime & "\_" & formUser & ".pdf"  ''Request for confirmation  'Dim intResponse As Integer  'intResponse = MsgBox("Are you sure you wanted to print?", vbYesNo)  'If intResponse = vbNo Then Cancel = True  'Launch excel  Set excelApp = New Excel.Application  'The workbook  Set logWB = excelApp.Workbooks.Open(filename:=LOG\_FILEPATHNAME)  'The worksheet  Set logSheet = logWB.Worksheets("log")  'Unprotect the log  logSheet.Unprotect (LOG\_PASSWORD)  'Log the entry  Dim logPKey As Long  logPKey = logSheet.UsedRange.Rows.Count + 1  logSheet.Cells(logPKey, 1).Value = logPKey  For dataColumnIndex = 0 To NUMBER\_OF\_DATA\_FIELDS  logSheet.Cells(logPKey, dataColumnIndex + 2).Value = formInputs(dataColumnIndex)  Next  'Protect the log  logSheet.Protect (LOG\_PASSWORD)  'Close log  logWB.Close savechanges:=True  'Release object references  Set cc = Nothing  Set logSheet = Nothing  Set logWB = Nothing  Set excelApp = Nothing  '' STAMPS REMOVED  ''Set form field stamps  'formDoc.SelectContentControlsByTag(ccUser)(1).LockContents = False  'formDoc.SelectContentControlsByTag(ccUser)(1).Range.Text = formInputs(iUser)  'formDoc.SelectContentControlsByTag(ccComputer)(1).LockContents = False  'formDoc.SelectContentControlsByTag(ccComputer)(1).Range.Text = formInputs(iComputer)  'formDoc.SelectContentControlsByTag(ccDatetime)(1).LockContents = False  'formDoc.SelectContentControlsByTag(ccDatetime)(1).Range.Text = formInputs(iDatetime)  'Save as PDF  formDoc.ExportAsFixedFormat \_  OutputFileName:=formInputs(iPDF), \_  ExportFormat:=wdExportFormatPDF, \_  OpenAfterExport:=False  ''Clear form field stamps  'formDoc.SelectContentControlsByTag(ccUser)(1).Range.Text = " "  'formDoc.SelectContentControlsByTag(ccUser)(1).LockContents = True  'formDoc.SelectContentControlsByTag(ccComputer)(1).Range.Text = " "  'formDoc.SelectContentControlsByTag(ccComputer)(1).LockContents = True  'formDoc.SelectContentControlsByTag(ccDatetime)(1).Range.Text = " "  'formDoc.SelectContentControlsByTag(ccDatetime)(1).LockContents = True  ''Confirmation message  'MsgBox ("Awesome, " & UCase(formUser) & "! The form has been saved successfully.")  ErrHandler:  End Sub |