Bexar VBA

Document No.   SDN.100-003
Document Title   Ultrasound Transducer Test Form
Document Type   **SOFTWARE DESIGN NOTES**

DCN: N/A   Effective Date: N/A   Date Printed: 24Sep2021

Software Design Notes

1. Revision History

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

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2. Introduction

2.1. 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.

2.2. 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.

2.3. References

2.3.1. 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

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3. 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.

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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 3 – 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

4. 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

```
VERSION 1.0 CLASS
BEGIN
  MultiUse = -1  'True
END
Attribute VB_Name = "EventClassModule"
Attribute VB_GlobalNameSpace = False
Attribute VB_Creatable = False
Attribute VB_PredeclaredId = False
Attribute VB_Exposed = False
'Nolan Manteufel
'Document No. 860-113-980
'Document Rev. 00
'15SEP2020
'VBA Password = 9hvmq6KchrZ+V&&j

'Used to move documents
Private Const PDF_FILEPATH As String = "O:\data\INF970-130\"
Private Const LOG_FILEPATHNAME As String = "O:\data\INF970-130\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"
```

```vba
    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
    Attribute wordApp.VB_VarHelpID = -1
    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
```

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```vba
    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
```

```vba
    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
```