

## Příloha 1 Filtrování a dekodování dat

```
Public RowCountFoFo As Integer
Public RowCountFoFi As Integer
Public RowCountFoZe As Integer
Dim myFile, myOutputFile, message, sourceInput, sourceInput2, messageTemp,
messagePart, binVar, tempBin, completeRevBin, completeBin, ICAOHex,
partMessage56 As String
Dim poleRet() As String
Dim testMy As String
Dim binMy As String
Dim length, stepCount, rest, utInt, sourceInputPos, resulttestBDS, lengthFail,
poczn As Integer
Dim resultHex As Long
Dim resultMyDouble As Double
Dim FailFourZero, FailFourFour, FailFourFive, FailOneSeven As Integer
Dim wb As Workbook
Dim ws As Worksheet
Dim timeString As String
Dim timeDev As Long
Dim datumSt As Date

Dim lDate As Date
Dim oDate As Date

Dim oFSO As Object
Dim oFolder As Object
Dim oFile As Object
Dim i As Integer

Dim finalMess As String
Dim finalPar As String
Dim Parity As String
Dim zprava As String
Public adresarDir As String

Sub Main()

Set wb = Workbooks.Add
Set ws = wb.Worksheets.Add
Set ws = wb.Worksheets.Add

wb.Sheets("List2").Activate
ActiveSheet.Name = "FourFour"

wb.Sheets("List1").Activate
ActiveSheet.Name = "FourFive"

RowCountFoFo = 1
RowCountFoFi = 1
RowCountFoZe = 1
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HlavaFoFo
HlavaFoFi

adresarDir = VyberSlozky()

Set oFSO = CreateObject("Scripting.FileSystemObject")

Set oFolder = oFSO.GetFolder(adresarDir)

For Each oFile In oFolder.Files

    myFile = adresarDir & "\"
    myFile = myFile & oFile.Name

    Open myFile For Input As #1
    RowCount = 1

    Do While Not EOF(1)
        lengthFail = 0

        Line Input #1, sourceInput

        If Len(sourceInput) > 0 Then

            poleRet = Split(sourceInput, ";")

                If Len(poleRet(UBound(poleRet))) = 28 Then
                    FailFourFour =
AlphaTestFourFour(poleRet(UBound(poleRet)))
                    FailFourFive =
AlphaTestFourFive(poleRet(UBound(poleRet)))
                    FailFourZero =
AlphaTestFourZero(poleRet(UBound(poleRet)))
                Else
                    lengthFail = 1
                End If

            ' *****

        If lengthFail = 0 Then

            timeString = poleRet(0)
            timeDev = CLng(Left(timeString, Len(timeString) - 3))
            lDate = "01/01/1970"
            oDate = DateAdd("s", timeDev, lDate)

            message = poleRet(UBound(poleRet))

                If Not (Len(message) Mod 4 <> 0) Then
                    stepCount = 4
                Else

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    If Not (Len(message) Mod 2 <> 0) Then
        stepCount = 2
    Else
        stepCount = 1
    End If
End If

completeBin = ""

For i = 0 To Len(message) - 1 Step stepCount
    testMy = Right(Left(message, i + stepCount), stepCount)
    resultMyDouble = Hex2Dec(testMy)
    testMy = Dec2Bin(resultMyDouble, stepCount * 4)
    completeBin = completeBin & testMy
Next i

DF = Left(completeBin, 5)

zprava = Left(completeBin, 88)
finalMess = Propocet_CRC(zprava)
finalMess = BinToHex(finalMess)
Parity = Right(poleRet(UBound(poleRet)), 6)
ICAOHex = Propoci_par(finalMess, Parity)

partMessage56 = Left(Right(completeBin, 80), 56)

' *****

Call AlphaTestOneSeven(poleRet(UBound(poleRet)), partMessage56)
FailOneSeven = AlphaTestOneSeven(poleRet(UBound(poleRet)),
partMessage56)

If FailFourFour = 0 And FailOneSeven <> 0 And (DF = "10100" Or DF =
"10101") Then
    If FailFourZero = 0 Then
        FailFourZeroDecoding = DecodingFourZero(partMessage56)
        If FailFourZero <> 0 Or FailFourZeroDecoding <> 0 Then
            Call DecodingFourFour(partMessage56, ICAOHex, oDate)
        End If
    Else
        Call DecodingFourFour(partMessage56, ICAOHex, oDate)
    End If
Else
    If FailFourFive = 0 Then
        Call DecodingFourFive(partMessage56, ICAOHex, oDate)
    End If
End If
End If
End If
Loop

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Close #1

Next oFile

If ExistujeSoubor("'" & adresarDir & "\vysledky\vysledek.xls") = 1 Then
    wb.SaveAs("'" & adresarDir & "\vysledky\vysledek" & "_" & ".xls")
Else
    wb.SaveAs("'" & adresarDir & "\vysledky\vysledek.xls")
End If

wb.Close

End Sub
Function AlphaTestOneSeven(hexaMessage As String, ByVal binarymessage As String)
As Integer
Dim partSt0S As String
Dim partValSt0S As String
Dim failureCount0S As Integer

failureCount0S = 0

poczn = pocetznaku(binarymessage, "0")
If poczn >= 40 Then
    MsgBox ("oneseven binary ok" & poczn)
Else
    failureCount0S = failureCount0S + 1
End If

partSt0S = Right(Left(hexaMessage, 22), 7)

If partSt0S = "0000000" Or partSt0S = "8000000" Then
    Else
        failureCount0S = failureCount0S + 1
    End If

AlphaTestOneSeven = failureCount0S

End Function

Function AlphaTestFourZero(hexaMessage As String) As Integer
Dim partStFZ As String
Dim partValStFZ As String
Dim failureCountFZ As Integer

failureCountFZ = 0

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partStFZ = Right(Left(hexaMessage, 18), 1)

    If partStFZ = "0" Or partStFZ = "2" Or partStFZ = "4" Or partStFZ = "6" Or
partStFZ = "8" Or partStFZ = "A" Or partStFZ = "C" Or partStFZ = "E" Then
        partValStFZ = Right(Left(hexaMessage, 20), 2)
        If partValStFZ = "00" Or partValStFZ = "01" Then
            'MsgBox ("40R.1: OK : " & hexaMessage)
        Else
            failureCountFZ = failureCountFZ + 1
        End If
    End If

partStFZ = Right(Left(hexaMessage, 21), 1)

    If partStFZ = "0" Or partStFZ = "2" Or partStFZ = "4" Or partStFZ = "6" Or
partStFZ = "8" Or partStFZ = "A" Or partStFZ = "C" Or partStFZ = "E" Then
        partValStFZ = Right(Left(hexaMessage, 22), 1)
        If partValStFZ = "0" Or partValStFZ = "1" Or partValStFZ = "2" Or
partValStFZ = "3" Or partValStFZ = "4" Or partValStFZ = "5" Or partValStFZ = "6"
Or partValStFZ = "7" Then
            'MsgBox ("40R.2: OK : " & hexaMessage)
        Else
            failureCountFZ = failureCountFZ + 1
        End If
    End If

partStFZ = Right(Left(hexaMessage, 9), 1)

    If partStFZ = "0" Or partStFZ = "1" Or partStFZ = "2" Or partStFZ = "3" Or
partStFZ = "4" Or partStFZ = "5" Or partStFZ = "6" Or partStFZ = "7" Then
        partValStFZ = Right(Left(hexaMessage, 12), 4)
        If partValStFZ = "0000" Or partValStFZ = "0001" Or partValStFZ =
"0002" Or partValStFZ = "0003" Or partValStFZ = "0004" Or partValStFZ = "0005"
Or partValStFZ = "0006" Or partValStFZ = "0007" Then
            'MsgBox ("40.1: " & hexaMessage)
        Else
            failureCountFZ = failureCountFZ + 1
        End If
    End If

partStFZ = Right(Left(hexaMessage, 12), 1)

    If partStFZ = "0" Or partStFZ = "1" Or partStFZ = "2" Or partStFZ = "3" Or
partStFZ = "8" Or partStFZ = "9" Or partStFZ = "A" Or partStFZ = "B" Then

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        partValStFZ = Right(Left(hexaMessage, 12), 1)
        If partValStFZ = "0" Or partValStFZ = "8" Then
            partValStFZ = Right(Left(hexaMessage, 15), 3)
            If partValStFZ = "000" Or partValStFZ = "001" Or partValStFZ =
"002" Or partValStFZ = "003" Then
                'MsgBox ("40.2: OK : " & hexaMessage)
            Else
                failureCountFZ = failureCountFZ + 1
            End If
        End If
    End If
End If

partStFZ = Right(Left(hexaMessage, 15), 1)

    If partStFZ = "0" Or partStFZ = "1" Or partStFZ = "4" Or partStFZ = "5" Or
partStFZ = "8" Or partStFZ = "9" Or partStFZ = "C" Or partStFZ = "D" Then
        partValStFZ = Right(Left(hexaMessage, 15), 1)
        If partValStFZ = "0" Or partValStFZ = "4" Or partValStFZ = "8" Or
partValStFZ = "C" Then
            partValStFZ = Right(Left(hexaMessage, 20), 5)
            If partValStFZ = "00000" Or partValStFZ = "00001" Then
                'MsgBox ("40.3: OK : " & hexaMessage)
            Else
                failureCountFZ = failureCountFZ + 1
            End If
        End If
    End If
End If

partStFZ = Right(Left(hexaMessage, 20), 1)

    If partStFZ = "0" Or partStFZ = "2" Or partStFZ = "4" Or partStFZ = "6" Or
partStFZ = "8" Or partStFZ = "A" Or partStFZ = "C" Or partStFZ = "E" Then
        partValStFZ = Right(Left(hexaMessage, 22), 2)
        If partValStFZ = "00" Or partValStFZ = "01" Or partValStFZ = "02" Or
partValStFZ = "03" Or partValStFZ = "04" Or partValStFZ = "05" Or partValStFZ =
"06" Or partValStFZ = "07" Then
            'MsgBox ("40.4: " & hexaMessage)
        Else
            failureCountFZ = failureCountFZ + 1
        End If
    End If
End If

partStFZ = Right(Left(hexaMessage, 22), 1)

    If partStFZ = "0" Or partStFZ = "1" Or partStFZ = "2" Or partStFZ = "3" Or
partStFZ = "8" Or partStFZ = "9" Or partStFZ = "A" Or partStFZ = "B" Then
        partValStFZ = Right(Left(hexaMessage, 22), 1)
        If partValStFZ = "0" Or partValStFZ = "8" Then
            'MsgBox ("40.5: " & hexaMessage)
        End If
    End If
End If

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        Else
            failureCountFZ = failureCountFZ + 1
        End If
    End If

    AlphaTestFourZero = failureCountFZ

End Function

Function AlphaTestFourFour(hexaMessage As String) As Integer
Dim partStr As String
Dim partValStr As String
Dim failureCount As Integer

failureCount = 0

    partStr = Right(Left(hexaMessage, 10), 1)

    If partStr = "0" Or partStr = "1" Or partStr = "2" Or partStr = "3" Or
partStr = "4" Or partStr = "5" Or partStr = "6" Or partStr = "7" Then
        partValStr = Right(Left(hexaMessage, 14), 5)
        If partValStr = "00000" Or partValStr = "00001" Then
            'MsgBox ("WIND: OK : " & hexaMessage)
        Else
            failureCount = failureCount + 1
        End If
    End If

    partStr = Right(Left(hexaMessage, 14), 1)

    If (partStr = "0" Or partStr = "2" Or partStr = "4" Or partStr = "6" Or
partStr = "8" Or partStr = "A" Or partStr = "C" Or partStr = "E") And
failureCount = 0 Then
        partValStr = Right(Left(hexaMessage, 17), 1)
        If partValStr = "0" Or partValStr = "1" Or partValStr = "2" Or
partValStr = "3" Then
            partValStr = Right(Left(hexaMessage, 16), 2)
            If partValStr = "00" Then
                'MsgBox ("TEMP: OK : " & hexaMessage)
            Else
                failureCount = failureCount + 1
            End If
        End If
    End If
End If

    partStr = Right(Left(hexaMessage, 17), 1)

    If (partStr = "0" Or partStr = "1" Or partStr = "4" Or partStr = "5" Or
partStr = "8" Or partStr = "9" Or partStr = "C" Or partStr = "D") And
failureCount = 0 Then

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        partValStr = Right(Left(hexaMessage, 19), 3)
        If partValStr = "000" Or partValStr = "400" Or partValStr = "800" Or
partValStr = "C00" Then
            'MsgBox ("PRESS: OK : " & hexaMessage)
        Else
            failureCount = failureCount + 1
        End If

        partStr = Right(Left(hexaMessage, 20), 1)

        If failureCount = 0 And (partStr = "0" Or partStr = "1" Or partStr = "4" Or
partStr = "5" Or partStr = "8" Or partStr = "9" Or partStr = "C" Or partStr =
"D") Then
            partValStr = Right(Left(hexaMessage, 20), 1)
            If partValStr = "0" Or partValStr = "4" Or partValStr = "8" Or
partValStr = "C" Then
                partValStr = Right(Left(hexaMessage, 21), 1)
                If partValStr = "0" Or partValStr = "1" Or partValStr = "2"
Or partValStr = "3" Or partValStr = "4" Or partValStr = "5" Or partValStr = "6"
Or partValStr = "7" Then
                    'MsgBox ("TURB: OK : " & hexaMessage)
                Else
                    failureCount = failureCount + 1
                End If
            End If
        End If

        partStr = Right(Left(hexaMessage, 21), 1)

        If (partStr = "0" Or partStr = "1" Or partStr = "2" Or partStr = "3" Or
partStr = "8" Or partStr = "9" Or partStr = "A" Or partStr = "B") And
failureCount = 0 Then
            partValStr = Right(Left(hexaMessage, 21), 1)
            If partValStr = "0" Or partValStr = "8" Then
                partValStr = Right(Left(hexaMessage, 22), 1)
                If partValStr = "0" Then
                    'MsgBox ("HUM: OK : " & hexaMessage)
                Else
                    failureCount = failureCount + 1
                End If
            End If
        End If

        End If
    End If

AlphaTestFourFour = failureCount

End Function

Function AlphaTestFourFive(hexaMessage As String) As Integer
Dim partSt As String
Dim partValSt As String
Dim failureCoun As Integer

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failureCoun = 0

partSt = Right(Left(hexaMessage, 21), 1)

    If partSt = "0" Or partSt = "2" Or partSt = "4" Or partSt = "6" Or partSt =
"8" Or partSt = "A" Or partSt = "C" Or partSt = "E" Then
        partValSt = Right(Left(hexaMessage, 22), 2)
        If partValSt = "00" Or partValSt = "20" Or partValSt = "40" Or
partValSt = "60" Or partValSt = "80" Or partValSt = "A0" Or partValSt = "C0" Or
partValSt = "E0" Then
            'MsgBox ("RES: OK : " & hexaMessage)
        Else
            failureCoun = failureCoun + 1
        End If
    End If

partSt = Right(Left(hexaMessage, 9), 1)

    If (partSt = "0" Or partSt = "1" Or partSt = "2" Or partSt = "3" Or partSt =
"4" Or partSt = "5" Or partSt = "6" Or partSt = "7") And failureCoun = 0 Then
        partValSt = Right(Left(hexaMessage, 9), 1)
        If partValSt = "0" Or partValSt = "1" Then
            'MsgBox ("TURB: OK : " & hexaMessage)
        Else
            failureCoun = failureCoun + 1
        End If
    End If

partSt = Right(Left(hexaMessage, 9), 1)

    If (partSt = "0" Or partSt = "2" Or partSt = "4" Or partSt = "6" Or partSt =
"8" Or partSt = "A" Or partSt = "C" Or partSt = "E") And failureCoun = 0 Then
        partValSt = Right(Left(hexaMessage, 10), 1)
        If partValSt = "0" Or partValSt = "1" Or partValSt = "2" Or
partValSt = "3" Then
            'MsgBox ("W/S: OK : " & hexaMessage)
        Else
            failureCoun = failureCoun + 1
        End If
    End If

partSt = Right(Left(hexaMessage, 10), 1)

    If (partSt = "0" Or partSt = "1" Or partSt = "4" Or partSt = "5" Or partSt =
"8" Or partSt = "9" Or partSt = "C" Or partSt = "D") And failureCoun = 0 Then
        partValSt = Right(Left(hexaMessage, 10), 1)
        If partValSt = "0" Or partValSt = "4" Or partValSt = "8" Or
partValSt = "C" Then
            partValSt = Right(Left(hexaMessage, 11), 1)
            If partValSt = "0" Or partValSt = "1" Or partValSt = "2" Or
partValSt = "3" Or partValSt = "4" Or partValSt = "5" Or partValSt = "6" Or
partValSt = "7" Then

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        MsgBox ("MB: OK : " & hexaMessage)
    Else
        failureCoun = failureCoun + 1
    End If
End If
End If

partSt = Right(Left(hexaMessage, 11), 1)

If (partSt = "0" Or partSt = "1" Or partSt = "2" Or partSt = "3" Or partSt =
"8" Or partSt = "9" Or partSt = "A" Or partSt = "B") And failureCoun = 0 Then
    partValSt = Right(Left(hexaMessage, 10), 1)
    If partValSt = "0" Or partValSt = "8" Then
        MsgBox ("ICING: OK : " & hexaMessage)
    Else
        failureCoun = failureCoun + 1
    End If
End If

partSt = Right(Left(hexaMessage, 12), 1)

If (partSt = "0" Or partSt = "1" Or partSt = "2" Or partSt = "3" Or partSt =
"4" Or partSt = "5" Or partSt = "6" Or partSt = "7") And failureCoun = 0 Then
    partValSt = Right(Left(hexaMessage, 12), 1)
    If partValSt = "0" Or partValSt = "1" Then
        MsgBox ("VORT: OK : " & hexaMessage)
    Else
        failureCoun = failureCoun + 1
    End If
End If

partSt = Right(Left(hexaMessage, 12), 1)

If (partSt = "0" Or partSt = "2" Or partSt = "4" Or partSt = "6" Or partSt =
"8" Or partSt = "A" Or partSt = "C" Or partSt = "E") And failureCoun = 0 Then
    partValSt = Right(Left(hexaMessage, 15), 3)
    If partValSt = "000" Or partValSt = "001" Or partValSt = "002" Or
partValSt = "003" Then
        MsgBox ("TEMP: OK : " & hexaMessage)
    Else
        failureCoun = failureCoun + 1
    End If
End If

partSt = Right(Left(hexaMessage, 15), 1)

If (partSt = "0" Or partSt = "1" Or partSt = "4" Or partSt = "5" Or partSt =
"8" Or partSt = "9" Or partSt = "C" Or partSt = "D") And failureCoun = 0 Then
    partValSt = Right(Left(hexaMessage, 15), 1)
    If partValSt = "0" Or partValSt = "4" Or partValSt = "8" Or
partValSt = "C" Then
        partValSt = Right(Left(hexaMessage, 18), 3)
        If partValSt = "001" Or partValSt = "002" Or partValSt = "003"
Then

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                MsgBox ("PRESS: OK : " & hexaMessage)
            Else
                failureCoun = failureCoun + 1
            End If
        End If
    End If

    partSt = Right(Left(hexaMessage, 18), 1)

    If (partSt = "0" Or partSt = "1" Or partSt = "4" Or partSt = "5" Or partSt =
"8" Or partSt = "9" Or partSt = "C" Or partSt = "D") And failureCoun = 0 Then
        partValSt = Right(Left(hexaMessage, 18), 1)
        If partValSt = "0" Or partValSt = "4" Or partValSt = "8" Or
partValSt = "C" Then
            partValSt = Right(Left(hexaMessage, 22), 4)
            If partValSt = "0000" Then
                MsgBox ("HEIGHT: OK : " & hexaMessage)
            Else
                failureCoun = failureCoun + 1
            End If
        End If
    End If

    AlphaTestFourFive = failureCoun

End Function

Function DecodingFourZero(messageFoZe As String) As Integer
Dim Reserve As String
Dim Res As String
Dim MCPselAlt As String
Dim FMSselAlt As String
Dim BarPress As String
Dim appmode As String
Dim taralt As String

Reserve = Right(Left(messageFoZe, 47), 8)
Res = Right(Left(messageFoZe, 53), 2)
MCPselAlt = Right(Left(messageFoZe, 13), 12)
FMSselAlt = Right(Left(messageFoZe, 26), 12)
BarPress = Right(Left(messageFoZe, 39), 12)
appmode = Right(Left(messageFoZe, 51), 3)
taralt = Right(Left(messageFoZe, 56), 2)

failureCountFZD = 0

Reserve = Bin2Dec(Reserve)
If Reserve <> 0 Then
    failureCountFZD = failureCountFZD + 1
End If

Res = Bin2Dec(Res)
If Res <> 0 Then

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        failureCountFZD = failureCountFZD + 1
    End If

MCPselAlt = Bin2Dec(MCPselAlt)
If MCPselAlt < 0 Or MCPselAlt > 2950 Then
    failureCountFZD = failureCountFZD + 1
End If

FMSSelAlt = Bin2Dec(FMSSelAlt)
If FMSSelAlt < 0 Or FMSSelAlt > 2950 Then
    failureCountFZD = failureCountFZD + 1
End If

BarPress = Bin2Dec(BarPress)
If (BarPress < 2080 And BarPress <> 0) Or (BarPress > 2220 And BarPress <> 0)
Then
    failureCountFZD = failureCountFZD + 1
End If

appmode = Bin2Dec(appmode)
If appmode <> 0 And appmode <> 2 And appmode <> 4 Then
    failureCountFZD = failureCountFZD + 1
End If

taralt = Bin2Dec(taralt)
If taralt > 3 Then
    failureCountFZD = failureCountFZD + 1
End If

If failureCountFZD = 0 Then
    ActiveSheet.Cells(RowCountFoZe, 1) = "" & ICAOHexFZ
    ActiveSheet.Cells(RowCountFoZe, 2) = "" & MCPselAlt
    ActiveSheet.Cells(RowCountFoZe, 3) = "" & FMSSelAlt
    ActiveSheet.Cells(RowCountFoZe, 4) = "" & BarPress
    ActiveSheet.Cells(RowCountFoZe, 5) = "" & appmode
    ActiveSheet.Cells(RowCountFoZe, 6) = "" & taralt
End If

DecodingFourZero = failureCountFZD

End Function

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Function DecodingFourFour(messageFoFo As String, ByVal ICAOH As String,
oDateFoFo As Date)
    Dim humid As String
    Dim turbulence As String
    Dim averStatPress As String
    Dim FOM As String
    Dim windSpeed As String
    Dim windDir As String

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Dim statAirTemp As String
Dim windDirect As Long
Dim FOMValue As String
Dim FOMInt, windDirSign, statAirTempSign, TURInt, windSpeedInt,
failureCountFFD As Integer

wb.Sheets("FourFour").Activate

failureCountFFD = 0

FOM = Right(Left(messageFoFo, 4), 4)
windSpeed = Right(Left(messageFoFo, 14), 9)
windDir = Right(Left(messageFoFo, 23), 9)
statAirTempSign = Int(Right(Left(messageFoFo, 25), 1))
statAirTemp = Right(Left(messageFoFo, 34), 10)
averStatPress = Right(Left(messageFoFo, 46), 11)
turbulence = Right(Left(messageFoFo, 49), 2)
humid = Right(Left(messageFoFo, 56), 6)

FOMInt = Int(Bin2Dec(FOM))

Select Case FOMInt
Case 0
    FOMValue = "Invalid"
Case 1
    FOMValue = "INS"
Case 2
    FOMValue = "GNSS"
Case 3
    FOMValue = "DME/DME"
Case 4
    FOMValue = "VOR"
Case Else
    FOMValue = "Reserved"
    failureCountFFD = failureCountFFD + 1
End Select

windSpeedIn = Int(Bin2Dec(windSpeed))
If windSpeedIn < 0 Or windSpeedIn > 80 Then
    failureCountFFD = failureCountFFD + 1
End If

windDirect = Bin2Dec(windDir) * (180 / 256)
If windDirect < 0 Or windDirect > 360 Then
    failureCountFFD = failureCountFFD + 1
End If

If statAirTempSign = 0 Then
    staticAirTemp = Bin2Dec(statAirTemp) * (1 / 4)
    If staticAirTemp > 25 Then

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        failureCountFFD = failureCountFFD + 1
    End If

Else
    staticAirTemp = (Bin2Dec(statAirTemp) - 1024) * (1 / 4)
    If staticAirTemp < -68.5 Then
        failureCountFFD = failureCountFFD + 1
    End If
End If

averStatPress = Bin2Dec(averStatPress)
If averStatPress < 0 Or averStatPress > 1080 Then
    failureCountFFD = failureCountFFD + 1
End If

TURInt = Int(Bin2Dec(turbulence))

Select Case TURInt
    Case 0
        TURValue = "Nil"
    Case 1
        TURValue = "Light"
    Case 2
        TURValue = "Moderate"
    Case Else
        TURValue = "Severe"
End Select

humidity = Bin2Dec(humid) * (64 / 100)
If humidity < 0 Or humidity > 64 Then
    failureCountFFD = failureCountFFD + 1
End If

If failureCountFFD = 0 Then

    ActiveSheet.Cells(RowCountFoFo, 1) = "" & oDateFoFo
    ActiveSheet.Cells(RowCountFoFo, 2) = "" & ICAOH
    ActiveSheet.Cells(RowCountFoFo, 3) = "" & FOMValue
    ActiveSheet.Cells(RowCountFoFo, 4) = "" & windSpeedIn
    ActiveSheet.Cells(RowCountFoFo, 5) = "" & windDirect
    ActiveSheet.Cells(RowCountFoFo, 6) = "" & staticAirTemp
    ActiveSheet.Cells(RowCountFoFo, 7) = "" & averStatPress
    ActiveSheet.Cells(RowCountFoFo, 8) = "" & TURValue
    ActiveSheet.Cells(RowCountFoFo, 9) = "" & humidity

    End If

RowCountFoFo = RowCountFoFo + 1

```

End Function

```
Function DecodingFourFive(messageFoFi As String, ByVal ICAOHe As String,
oDateFoFi As Date)
    Dim radioHeight As String
    Dim turb As String
    Dim windShear As String
    Dim microburst As String
    Dim icing As String
    Dim wakeVortex As String
    Dim stAirTemp As String
    Dim avStatPre As String
    Dim TURBInt, WSInt, MBIInt, ICInt, WVInt, stAirTempSign, failureCountFFiD As
Integer

    wb.Sheets("FourFive").Activate
    failureCountFFiD = 0

    turb = Right(Left(messageFoFi, 3), 2)
    windShear = Right(Left(messageFoFi, 6), 2)
    microburst = Right(Left(messageFoFi, 9), 2)
    icing = Right(Left(messageFoFi, 12), 2)
    wakeVortex = Right(Left(messageFoFi, 15), 2)
    stAirTempSign = Int(Right(Left(messageFoFi, 17), 1))
    stAirTemp = Right(Left(messageFoFi, 26), 10)
    avStatPre = Right(Left(messageFoFi, 38), 11)
    radioHeight = Right(Left(messageFoFi, 51), 12)

    TURBInt = Int(Bin2Dec(turb))

    Select Case TURBInt
        Case 0
            TURBValue = "Nil"
        Case 1
            TURBValue = "Light"
        Case 2
            TURBValue = "Moderate"
        Case Else
            TURBValue = "Severe"
    End Select

    WSInt = Int(Bin2Dec(windShear))

    Select Case WSInt
        Case 0
            WSValue = "Nil"
        Case 1
            WSValue = "Light"
        Case 2
            WSValue = "Moderate"
```

```

    Case Else
        WSValue = "Severe"
    End Select

MBInt = Int(Bin2Dec(microburst))

Select Case MBInt
    Case 0
        MBValue = "Nil"
    Case 1
        MBValue = "Light"
    Case 2
        MBValue = "Moderate"
    Case Else
        MBValue = "Severe"
End Select

ICInt = Int(Bin2Dec(icing))

Select Case ICInt
    Case 0
        ICValue = "Nil"
    Case 1
        ICValue = "Light"
    Case 2
        ICValue = "Moderate"
    Case Else
        ICValue = "Severe"
End Select

    WVInt = Int(Bin2Dec(wakeVortex))

Select Case WVInt
    Case 0
        WVValue = "Nil"
    Case 1
        WVValue = "Light"
    Case 2
        WVValue = "Moderate"
    Case Else
        WVValue = "Severe"
End Select

If stAirTempSign = 0 Then
    stAirTemp = Bin2Dec(stAirTemp) * (1 / 4)
    If stAirTemp > 60 Then
        failureCountFFiD = failureCountFFiD + 1
    End If
Else

```



```

    stAirTemp = (Bin2Dec(stAirTemp) - 1024) * (1 / 4)
    If stAirTemp < -80 Then
        failureCountFFiD = failureCountFFiD + 1
    End If

End If

avStatPre = Bin2Dec(avStatPre)
If avStatPre < 0 Or avStatPre > 1080 Then
    failureCountFFiD = failureCountFFiD + 1
End If

rH = Bin2Dec(radioHeight) * 16
If rH < 0 Or rH > 2950 Then
    failureCountFFiD = failureCountFFiD + 1
End If

If failureCountFFiD = 0 Then

    ActiveSheet.Cells(RowCountFoFo, 1) = "" & oDateFoFi
    ActiveSheet.Cells(RowCountFoFo, 2) = "" & ICAOHe
    ActiveSheet.Cells(RowCountFoFi, 3) = "" & TURBValue
    ActiveSheet.Cells(RowCountFoFi, 4) = "" & WSValue
    ActiveSheet.Cells(RowCountFoFi, 5) = "" & MBValue
    ActiveSheet.Cells(RowCountFoFi, 6) = "" & ICValue
    ActiveSheet.Cells(RowCountFoFi, 7) = "" & WVValue
    ActiveSheet.Cells(RowCountFoFi, 8) = "" & stAirTemp
    ActiveSheet.Cells(RowCountFoFi, 9) = "" & avStatPre
    ActiveSheet.Cells(RowCountFoFi, 10) = "" & rH

    RowCountFoFi = RowCountFoFi + 1
End If

End Function

Function FromHex(hexString As String) As Long
    FromHex = Val("&H" & hexString)
End Function

Function Dec2Bin(ByVal DecimalIn As Variant, _
    Optional NumberOfBits As Variant) As String
    Dec2Bin = ""
    DecimalIn = Int(CDec(DecimalIn))
    Do While DecimalIn <> 0
        Dec2Bin = Format$(DecimalIn - 2 * Int(DecimalIn / 2)) & Dec2Bin
        DecimalIn = Int(DecimalIn / 2)
    Loop
    If Not IsMissing(NumberOfBits) Then
        If Len(Dec2Bin) > NumberOfBits Then
            Dec2Bin = "Error - Number exceeds specified bit size"
        Else
            Dec2Bin = Right$(String$(NumberOfBits, _

```

```

        "0") & Dec2Bin, NumberOfBits)
    End If
End Function

Function ReverseString(originalString As String) As String
Dim lengthOrigStr As Integer
Dim Reversed As String
Dim Next_Char As String

    lengthOrigStr = Len(originalString)

    Reversed = ""

    For Pos = length To 1 Step -1

        Next_Char = Mid(originalString, Pos, 1)
        Reversed = Reversed & Next_Char
    Next Pos

    ReverseString = Reversed
End Function

Function Prohozeni(vstupniString As String) As String
Dim delkaStr, loopNr As Integer
Dim znakStr, tempStr As String
Dim vystupniStr As String

delkaStr = Len(vstupniString)
tempStr = vstupniString

vystupniStr = ""

    For loopNr = 1 To delkaStr Step 1
        znakStr = Right(tempStr, 1)
        tempStr = Left(tempStr, Len(tempStr) - 1)
        vystupniStr = vystupniStr & znakStr

    Next loopNr

Prohozeni = vystupniStr

End Function

Function Hex2Dec(h As String)
Dim l As Long: l = Len(h)
If l < 16 Then
    Hex2Dec = CDec("&h0" & h)
    If Hex2Dec < 0 Then Hex2Dec = Hex2Dec + 4294967296#
ElseIf l < 25 Then
    Hex2Dec = Hex2Dec(Left$(h, l - 9)) * 68719476736# + CDec("&h" &
Right$(h, 9))
End If

```

```

End Function

Function Bin2Dec(BinaryString As String) As Long
    Dim X As Integer
    For X = 0 To Len(BinaryString) - 1
        Bin2Dec = CDec(Bin2Dec) + Val(Mid(BinaryString, _
            Len(BinaryString) - X, 1)) * 2 ^ X
    Next
End Function

Sub HlavaFoFo()

wb.Sheets("FourFour").Activate

ActiveSheet.Cells(1, 1) = "TIME"
ActiveSheet.Cells(1, 2) = "ICAO ADRESS"
ActiveSheet.Cells(1, 3) = "FOM/Source"
ActiveSheet.Cells(1, 4) = "WIND SPEED"
ActiveSheet.Cells(1, 5) = "WIND DIRECTION"
ActiveSheet.Cells(1, 6) = "STAT AIR TEMP"
ActiveSheet.Cells(1, 7) = "AV STAT PRESSURE"
ActiveSheet.Cells(1, 8) = "TURBULENCE"
ActiveSheet.Cells(1, 9) = "HUMIDITY"

RowCountFoFo = RowCountFoFo + 1

End Sub

Sub HlavaFoFi()

wb.Sheets("FourFive").Activate

ActiveSheet.Cells(1, 1) = "TIME"
ActiveSheet.Cells(1, 2) = "ICAO ADRESS"
ActiveSheet.Cells(1, 3) = "TURBULENCE"
ActiveSheet.Cells(1, 4) = "WIND SHEAR"
ActiveSheet.Cells(1, 5) = "MICROBURST"
ActiveSheet.Cells(1, 6) = "ICING"
ActiveSheet.Cells(1, 7) = "WAKE VORTEX"
ActiveSheet.Cells(1, 8) = "STAT AIR TEMP"
ActiveSheet.Cells(1, 9) = "AV STAT PRESSURE"
ActiveSheet.Cells(1, 10) = "RADIO HEIGHT"

RowCountFoFi = RowCountFoFi + 1

End Sub

Sub ExistujeAdresar(cesta As String)

Dim Umisteni As String

```

---

```

Dim Hlaska As Byte

Umistení = cesta

If Len(Dir(Umistení, vbDirectory)) = 0 Then
    MsgBox "Adresář neexistuje."
Else
    MsgBox "Adresář existuje."
End If

End Sub

Function ExistujeSoubor(cesta As String) As Integer

If Len(Dir(cesta)) = 0 Then
    MsgBox "Soubor neexistuje."
    ExistujeSoubor = 0
Else
    MsgBox "Soubor existuje."
    ExistujeSoubor = 1
End If

End Function

Function OtevriSoubor() As String
Dim strFile As String

strFile = Application.GetOpenFilename()
MsgBox ("" & strFile)
OtevriSoubor = strFile

End Function

Function pocetznaku(retezec As String, hledany As String) As Integer
Dim strProhledavany As String
Dim strHledany As String
Dim lngLen As Long
Dim retPosition As Long
Dim lngPocet As Long

strProhledavany = retezec
strHledany = hledany
lngLen = Len(strProhledavany)

For i = 1 To lngLen
    retPosition = InStr(i, strProhledavany, strHledany, vbTextCompare)
    If retPosition = 0 Then Exit For
    lngPocet = lngPocet + 1
    i = retPosition
Next i
pocetznaku = lngPocet
End Function

```

```

Public Function UnixTimeToDate(ByVal Timestamp As Long) As Date
    Dim intDays As Integer, intHours As Integer, intMins As Integer, intSecs As Integer

    intDays = Timestamp \ 86400
    intHours = (Timestamp Mod 86400) \ 3600
    intMins = (Timestamp Mod 3600) \ 60
    intSecs = Timestamp Mod 60

    UnixTimeToDate = DateSerial(1970, 1, intDays + 1) + TimeSerial(intHours,
intMins, intSecs)
End Function

Sub vypisSouboru()

Dim oFSO As Object
Dim oFolder As Object
Dim oFile As Object
Dim i As Integer

Set oFSO = CreateObject("Scripting.FileSystemObject")

Set oFolder = oFSO.GetFolder("C:\Test\")

For Each oFile In oFolder.Files

    Cells(i + 1, 1) = oFile.Name

    i = i + 1

Next oFile

End Sub

Function Propocet_CRC(mes As String) As String
Dim message(88) As Integer
Dim CRC(24) As Integer
Dim DoInvert, Podm As Integer
Dim mea, result As String
Dim i As Integer

For i = 0 To 88
message(i) = Val(Right(Left(mes, i + 1), 1))
Next i

'MsgBox ("cislo je: " & message(0) & message(1) & message(2) & message(3))

For i = 0 To 23
CRC(i) = 0

```

```

Next i

For i = 0 To UBound(message) - 1
  If message(i) = 1 Then
    MsgBox ("podminka je 1")
    Podm = 1
  Else
    MsgBox ("podminka je 0")
    Podm = 0
  End If

  DoInvert = Podm Xor CRC(23)      'XOR required?

  CRC(23) = CRC(22) Xor DoInvert
  CRC(22) = CRC(21) Xor DoInvert
  CRC(21) = CRC(20) Xor DoInvert
  CRC(20) = CRC(19) Xor DoInvert
  CRC(19) = CRC(18) Xor DoInvert
  CRC(18) = CRC(17) Xor DoInvert
  CRC(17) = CRC(16) Xor DoInvert
  CRC(16) = CRC(15) Xor DoInvert
  CRC(15) = CRC(14) Xor DoInvert
  CRC(14) = CRC(13) Xor DoInvert
  CRC(13) = CRC(12) Xor DoInvert
  CRC(12) = CRC(11) Xor DoInvert
  CRC(11) = CRC(10)
  CRC(10) = CRC(9) Xor DoInvert
  CRC(9) = CRC(8)
  CRC(8) = CRC(7)
  CRC(7) = CRC(6)
  CRC(6) = CRC(5)
  CRC(5) = CRC(4)
  CRC(4) = CRC(3)
  CRC(3) = CRC(2) Xor DoInvert
  CRC(2) = CRC(1)
  CRC(1) = CRC(0)
  CRC(0) = DoInvert

  result = ""

  For j = 0 To 23
    result = result & CRC(23 - j)
  Next j

Next i

Propocet_CRC = result
End Function

Function Propoci_par(s1 As String, s2 As String) As String
Dim l As Integer

If Len(s1) < 6 Then
  For l = 1 To 6 - Len(s1)

```

```

        s1 = "0" & s1
    Next l
    MsgBox ("s1:" & s1)
End If

If Len(s2) < 6 Then
    For l = 1 To 6 - Len(s2)
        s2 = "0" & s2

    Next l
    MsgBox ("s2:" & s2)
End If

If Len(s1) <> Len(s2) Then Exit Function

sRes = ""

For i = 1 To Len(s1)
    vRes = Val("&H" & Mid(s1, i, 1)) Xor Val("&H" & Mid(s2, i, 1))
    sRes = sRes & Hex(vRes)
Next

Propoci_par = sRes

End Function

Function BinToHex(Binary As String)
Dim Value&, i&, Base#: Base = 1
For i = Len(Binary) To 1 Step -1
Value = Value + IIf(Mid(Binary, i, 1) = "1", Base, 0)
Base = Base * 2
Next i
BinToHex = Hex(Value)
End Function

Function VyberSlozky() As String

    With Application.FileDialog(msoFileDialogFolderPicker)

        .Title = "Výbir složky"

        .InitialView = msoFileDialogViewLargeIcons

        .InitialFileName = Environ("Temp")

        .ButtonName = "Vybrat"
    End With
End Function

```

```
.Show

If .SelectedItems.Count > 0 Then

    Debug.Print .SelectedItems(1)
    'MsgBox (" " & .SelectedItems(1))

    End If
    VyberSlozky = " " & .SelectedItems(1)
End With

End Function
```



Příloha 2 Struktura BDS registru 4,4 [7]

1	MSB
2	FOM/SOURCE
3	
4	LSB
5	STATUS (wind speed and direction)
6	MSB = 256 kt
7	
8	
9	WIND SPEED
10	
11	Range = [0, 511] kt
12	
13	
14	LSB = 1 kt
15	MSB = 180°
16	
17	WIND DIRECTION (True)
18	
19	
20	Range = [0, 360]°
21	
22	
23	LSB = 180/256°
24	SIGN
25	MSB = 64 °C
26	
27	
28	STATIC AIR TEMPERATURE
29	
30	
31	Range = [-128, +128] °C
32	
33	
34	LSB = 0.25 °C
35	STATUS
36	MSB = 1 024 hPa
37	
38	
39	
40	AVERAGE STATIC PRESSURE
41	
42	Range = [0, 2 048] hPa
43	
44	
45	
46	LSB = 1 hPa
47	STATUS
48	MSB TURBULENCE (see 1)
49	LSB
50	STATUS
51	MSB = 100%
52	
53	HUMIDITY
54	Range = [0, 100]%
55	
56	LSB = 100/64%

Příloha 3 Struktura BDS registru 4,5 [7]

1	STATUS	
2	MSB	TURBULENCE
3	LSB	
4	STATUS	
5	MSB	WIND SHEAR
6	LSB	
7	STATUS	
8	MSB	MICROBURST
9	LSB	
10	STATUS	
11	MSB	ICING
12	LSB	
13	STATUS	
14	MSB	WAKE VORTEX
15	LSB	
16	STATUS	
17	SIGN	
18	MSB = 64°C	
19		
20		STATIC AIR TEMPERATURE
21		
22		Range = [-128, +128] °C
23		
24		
25		
26	LSB = 0.25°C	
27	STATUS	
28	MSB = 1 024 hPa	
29		
30		
31		
32		AVERAGE STATIC PRESSURE
33		
34		Range = [0, 2 048] hPa
35		
36		
37		
38	LSB = 1 hPa	
39	STATUS	
40	MSB = 32 768 ft	
41		
42		
43		
44		RADIO HEIGHT
45		
46		Range = [0, 65 528] ft
47		
48		
49		
50		
51	LSB = 16 ft	
52		
53		
54		RESERVED
55		
56		