

## **Annex 3.**

**Codi font de l'algorisme de  
l'autoseqüència sencera**



```
Dim FicheroActivo, NombreFicheroActivo, PathFicheroActivo, Extension
Dim Mtrix(50,24)
Dim Linealni, Linealnc10, Linealnc15, LineaS5, LineaFi
Dim Time1, TimeInc10, TimeInc15, TimeS5, Time2
Dim Excel      ' Object variable for Excel
Dim ExcelSheet ' Object variable for Excel-sheet
Public NewFolder
Const DiademExcelWorkbook = "PNCAP_toyota.xls"
Const xlMaximized = &HFFFFFFD7

Public DataCol      ' Data column
Public DataRow      ' Data row
Public Choix

L1 = 0
Call SudDefLoad("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2. Macro\General.sud")
Call SudDlgShow("General")

If (DlgState = "IDCancel") Then
    Call AutoQuit("NO FUNCIONA!!!!!!")
End If

    If L1 = 0 then
        call estatics
    end if

    If L1 = 1 then
        Call FSA
    end if

    If L1 = 2 then
        Call PDA
    end if

    If L1 = 3 then
        Call SLS
    end if

    If L1 = 4 then
        Call MF
    end if

    If L1 = 5 then
        Call MTM
    end if

    If L1 = 6 then
        Call Pncap
    end if
```

'-----



ESTATIC

```
sub estatics()
```

```
Call FILECLOSEALL() 'parece innecesario, pero no lo quites INTRIGADO? !!!!!  
AutoDrvUser = "D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\  
Call FileNameGet("ANY", "FileRead", "*.DAT", "*.DAT", "Seleccionados_2","Yes" , "Seleccionar  
ficheros con i sin booster")  
If (DlgState = "IDCancel") Then  
    Call AutoQuit("No funciona????")  
End If
```

```
Call FILEOPEN("Seleccionados_2", 2)  
FicheroActivo = FR("Seleccionados_2", 1)  
Call DATALOAD(FicheroActivo)  
Call DesglocePath(FicheroActivo, NombreFicheroActivo, PathFicheroActivo, Extension)  
i = 1 ' Linea que estamos leyendo del fichero "Seleccionados", que contiene los  
      'nombres de los ficheros a transformar  
Call FILECLOSEALL()  
Call DATADELALL(1)  
Call CHNALLOC("Ped_eff", 50, 1)  
CL("Ped_eff") = 50  
Call CHNALLOC("MC_press", 50, 1)  
CL("MC_press") = 50  
Call CHNALLOC("File", 50, 1)  
CL("File") = 50  
chdx(1,CNo("Ped_eff")) = 0  
chdx(1,CNo("MC_press")) = 0  
chdx(1,CNo("File")) = 0  
Call DATASAVE(PathFicheroActivo + "Final_results" + Extension)  
Call FILECLOSEALL()
```

```
FicheroActivo = FR("Seleccionados_2", i)  
Do While FicheroActivo < > "EOF"
```

```
    Call DATALOAD(FicheroActivo)  
    Call DesglocePath(FicheroActivo, NombreFicheroActivo, PathFicheroActivo, Extension)
```

```
    Call Tractar3  
    Linea80kg = Find("(Ch('Ped_eff') > 82)", 1)
```

```
    STATSEL(1)    = "No"  
    STATSEL(2)    = "No"  
    STATSEL(3)    = "No"  
    STATSEL(4)    = "Yes"  
    STATSEL(5)    = "Yes"  
    STATSEL(6)    = "No"  
    STATSEL(7)    = "No"  
    STATSEL(8)    = "No"  
    STATSEL(9)    = "No"  
    STATSEL(10)   = "No"  
    STATSEL(11)   = "No"
```

```
STATSEL(12) = "No"  
STATSEL(13) = "No"  
STATSEL(14) = "No"  
STATSEL(15) = "No"  
STATSEL(16) = "No"  
STATSEL(17) = "No"  
STATSEL(18) = "No"  
STATSEL(19) = "No"  
STATSEL(20) = "No"  
STATSEL(21) = "No"  
STATSEL(22) = "No"  
STATCLIPCOPY = 0  
STATCLIPVALUE = 0  
STATFORMAT = ""
```

```
Call STATBLOCKCALC("Channel","1-","1") '... STATDIREC,ROWNOSTR,CHNNOSTR  
Sampling = 1/((chdx(2,CNo("Time")))-(chdx(1,CNo("Time"))))  
MaxTiempo = (chdx(1,CNo("Maximum value")))*Sampling  
'Call CHNSMOOTH("Ped_eff","Ped_eff",8) '... Y,E,SMOOTHWIDTH  
'Call CHNSMOOTH("MC_press","MC_press",8) '... Y,E,SMOOTHWIDTH  
Call ChnAreaDel("Ped_eff",Linea80kg,MaxTiempo)  
Call ChnAreaDel("MC_press",Linea80kg,MaxTiempo)
```

```
L20 = Cno("Ped_eff")  
CHNCOMMENT(L20) = NombreFicheroActivo  
L21 = Cno("MC_press")  
T20 = str(L20)&","&str(L21)  
Call CHNCLPCOPY(T20)  
Call FILECLOSEALL()  
Call DATALOAD(PathFicheroActivo + "Final_results" + Extension)  
If i = 1 then  
    Call CHNCLPPASTE(4)  
End If  
If i = 2 then  
    Call CHNCLPPASTE(6)  
End If  
If i = 3 then  
    Call CHNCLPPASTE(8)  
End If  
If i = 4 then  
    Call CHNCLPPASTE(10)  
End If  
If i = 5 then  
    Call CHNCLPPASTE(12)  
End If  
If i = 6 then  
    Call CHNCLPPASTE(14)  
End If  
If i = 7 then  
    Call CHNCLPPASTE(16)  
End If  
If i = 8 then  
    Call CHNCLPPASTE(18)  
End If  
If i = 9 then  
    Call CHNCLPPASTE(20)
```



```
End If
If i = 10 then
  Call CHNCLPPASTE(22)
End If

Call DATASAVE(PathFicheroActivo + "Final_results" + Extension)
i=i+1
FicheroActivo = FR("Seleccionados_2", i)
Loop

Call PICLOAD("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2. Macro\estaticas2.lpd")
'... PICFILE
Call PICUPDATE()
Call PICSAVE(PathFicheroActivo + "estatica.lpd")
L1 = 0
end sub
'-----
' Extras Static
'-----
Sub Tractar3()

CHNNAME(1) = "Time"

L4 = CNo("MC_press")
If L4 < > 0 Then
  Call OffsetDavant1ch_est1
  Call CHNSMOOTH(L4, L4, 3)
  CHNNAME(L4) = "MC_press"
End If

L5 = CNo("Ped_eff")
If L5 < > 0 Then
  Call CHNSMOOTH(L5, L5, 3)
  CHNNAME(L5) = "Ped_eff"
End If

End sub
'-----
' offset estatic
'-----
Sub OffsetDavant1ch_est1()
L4 = 4 'canal offset Davant
R2 = 0
L3 = CHNLENGTH(L4)
L3 = 50
R1 = 0
L6 = 1
Do While L6 <= L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/50
Call FormulaCalc("CH(L4): = CH(L4)-R2")

L4 = 5 'canal offset Davant
```



```
R2=0
L3=CHNLENGTH(L4)
L3=50
R1=0
L6=1
Do While L6 <= L3
  R5=CHD(L6, L4)
  R1=R1+R5
  L6=L6+1 ' <<< Step 1 or Step -1
Loop
R2=R1/50
Call FormulaCalc("CH(L4):=CH(L4)-R2")
```

```
L4=6 'canal offset Davant
R2=0
L3=CHNLENGTH(L4)
L3=50
R1=0
L6=1
Do While L6 <= L3
  R5=CHD(L6, L4)
  R1=R1+R5
  L6=L6+1 ' <<< Step 1 or Step -1
Loop
R2=R1/50
Call FormulaCalc("CH(L4):=CH(L4)-R2")
```

```
L4=7 'canal offset Davant
R2=0
L3=CHNLENGTH(L4)
L3=50
R1=0
L6=1
Do While L6 <= L3
  R5=CHD(L6, L4)
  R1=R1+R5
  L6=L6+1 ' <<< Step 1 or Step -1
Loop
R2=R1/50
Call FormulaCalc("CH(L4):=CH(L4)-R2")
End sub
```

```
'-----
'
'                               FSGP standard analisys
'
'-----
```

```
sub FSA()

L21=0
Call SudDefLoad("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2. Macro\FSA.sud")
Call SudDlgShow("Main")
If (DlgState = "IDCancel") Then
  Call AutoQuit("NO FUNCIONA!!!!!!!!!!")
End If
```



Call FILECLOSEALL() 'parece innecesario, pero no lo quites INTRIGADO? !!!!!'

```
'-----  
'  
'                                     FSGP 50 & 100 km/h  
'  
'-----
```

If L21 <= 3 then

```
AutoDrvUser = "D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\  
'Call DATASAVE("C:\Macro_feeling\Feeling_RES" + Extension)  
Call FileNameGet("ANY", "FileRead", "*.DAT", "*.DAT", "Seleccionados", "Yes", "SELECCIONAR  
FICHEROS A ANALIZAR")  
If (DlgState = "IDCancel") Then  
    Call AutoQuit("NO FUNCIONA!!!!!!!!!!")  
End If  
Call FILECLOSEALL() 'parece innecesario, pero no lo quites INTRIGADO? !!!!!'  
Call FILEOPEN("Seleccionados", 2)  
i = 1 ' Linea que estamos leyendo del fichero "Seleccionados", que contiene los  
    'nombres de los ficheros a transformar  
FicheroActivo = FR("Seleccionados", i)  
L10 = 1  
L30 = 5
```

Do While FicheroActivo <> "EOF"

```
    Call DATALOAD(FicheroActivo)  
    Call DesglocePath(FicheroActivo, NombreFicheroActivo, PathFicheroActivo, Extension)  
    T9 = PathFicheroActivo  
    T10 = NombreFicheroActivo  
    L15 = Find("Ch('Vhc_spd') < 5", 1)  
    Call SelecSmooth2  
    Call OFFSET2  
    Call tall  
    Call noms()  
    Call CHNCLPCOPY("2-6") '-----2-5  
    Call FILECLOSEALL()  
    If i > 1 then  
        Call DATALOAD(PathFicheroActivo + "Feeling_7_2_50_RES")  
    End If  
    Call CHNCLPPASTE(L10)  
    Call DATASAVE(PathFicheroActivo + "Feeling_7_2_50_RES" + Extension)  
    L10 = L10 + 5 '----- + 4
```

```
    i = i + 1  
    FicheroActivo = FR("Seleccionados", i)
```

```
Loop  
L11 = L10 - 5 '-----4  
Call CHNDELETE(L11-L10)          '... CLPSOURCE
```



```
Call CHNDELETE(cno("Timer_1"))
PathFicheroActivo = T9
T9 = str(PathFicheroActivo)
GraphDrvUser = T9
Call imatges
Call exporting
L1 = 1
End If
```

```
'-----
'
'                               FSGP 200 km/h
'
'-----
```

```
If L21 > 3 and L21 <= 5 then
AutoDrvUser = "D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\"
'Call DATASAVE("C:\Macro_feeling\Feeling_RES" + Extension)
Call FileNameGet("ANY", "FileRead", "*.DAT", "*.DAT", "Seleccionados", "Yes", "SELECCIONAR
FICHEROS A ANALIZAR")
If (DlgState = "IDCancel") Then
    Call AutoQuit("NO FUNCIONA!!!!!!!!!!")
End If
```

```
Call FILEOPEN("Seleccionados", 2)
i = 1 ' Linea que estamos leyendo del fichero "Seleccionados", que contiene los
' nombres de los ficheros a transformar
```

```
FicheroActivo = FR("Seleccionados", i)
L10 = 1
Do While FicheroActivo <> "EOF"
```

```
    Call DATALOAD(FicheroActivo)
    Call DesglocePath(FicheroActivo, NombreFicheroActivo, PathFicheroActivo, Extension)
    T9 = PathFicheroActivo
    Call SelecSmooth2
    Call OFFSET2
    Call tall2
    Call noms()
    Call CHNCLPCOPY("2-6") '-----2-5
    Call FILECLOSEALL()
    If i > 1 then
        Call DATALOAD(PathFicheroActivo + "Feeling_7_2_100_RES")
    End If
    Call CHNCLPPASTE(L10)
    Call DATASAVE(PathFicheroActivo + "Feeling_7_2_100_RES" + Extension)
    L10 = L10 + 5 '----- + 4
```

```
    i = i + 1
    FicheroActivo = FR("Seleccionados", i)
```

```
Loop
L11 = L10 - 5 '-----4
Call CHNDELETE(L11 - L10)          '... CLPSOURCE
Call CHNDELETE(cno("Timer_1"))
```





```
PathFicheroActivo = T9
T9 = str(PathFicheroActivo)
GraphDrvUser = T9
Call imatges
Call exporting
L1 = 1
End If

'-----
'
'                               Build up feeling
'
'-----

If L21 = 6 then
AutoDrvUser = "D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\"
Call FileNameGet("ANY", "FileRead", "*.DAT", "*.DAT", "Seleccionados", "Yes", "SELECCIONAR
FICHEROS BUILD UP FEELING")
If (DlgState = "IDCancel") Then
    Call AutoQuit("Que fas !!! l'has cagat Felip (no s'ha fet res)")
End If

Call FILEOPEN("Seleccionados", 2)
i = 1 ' Linea que estamos leyendo del fichero "Seleccionados", que contiene los
      'nombres de los ficheros a transformar

FicheroActivo = FR("Seleccionados", i)
L10 = 1

Do While FicheroActivo < > "EOF"

    Call DATALOAD(FicheroActivo)
    Call DesglocePath(FicheroActivo, NombreFicheroActivo, PathFicheroActivo, Extension)
    Call Selec_eficacia2
    Call CHNSMOOTH(1, 1, 6)
    Call CHNSMOOTH(2, 2, 6)
    Call CHNSMOOTH(3, 3, 6)
    Call CHNSMOOTH(4, 4, 6)
    Call CHNSMOOTH(5, 5, 6)
    Call CHNSMOOTH(6, 6, 6)
    Call CHNSMOOTH(7, 7, 6)
    Call OffseDarrere1ch_ef
    Call OffsetDavant1cheficacia
    Call noms_eff
    Call CHNCLPCOPY("1-7")
    Call FILECLOSEALL()
    If i > 1 then
        Call DATALOAD(PathFicheroActivo + "Build_up_final")
    End If
    Call CHNCLPPASTE(L10)
    Call DATASAVE(PathFicheroActivo + "Build_up_final" + Extension)
    L10 = L10 + 7
```



i=i+1

FicheroActivo = FR("Seleccionados", i)

Loop

L11=L10-7

Call CHNDELETE(L11-L10)                   '... CLPSOURCE

Call PICLOAD("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2.

Macro\Temporalstodasfrenadasfeeling73.LPD")

Call PICUPDATE()

R1 = 0

SudDefLoad("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2. Macro\Eficacia.sud")

SudDlgShow("Default")

If R1 = 1 then

  Call CHNCLPCOPY("1-7")

  Call FILECLOSEALL()

  Call DATADELALL(1)

  Call CHNCLPPASTE (1)

  Call DATASAVE(PathFicheroActivo + "Build\_up\_final.dat")

  T5=PathFicheroActivo + "Build\_up\_final.dat"

  T6=PathFicheroActivo + "Build\_up\_final\_tall"

  Call Tallar\_feeling73

End If

If R1 = 2 then

  Call CHNCLPCOPY("8-14")

  Call FILECLOSEALL()

  Call DATADELALL(1)

  Call CHNCLPPASTE (1)

  Call DATASAVE(PathFicheroActivo + "Build\_up\_final.dat")

  T5=PathFicheroActivo + "Build\_up\_final.dat"

  T6=PathFicheroActivo + "Build\_up\_final\_tall"

  Call Tallar\_feeling73

End If

If R1 = 3 then

  Call CHNCLPCOPY("15-21")

  Call FILECLOSEALL()

  Call DATADELALL(1)

  Call CHNCLPPASTE (1)

  Call DATASAVE(PathFicheroActivo + "Build\_up\_final.dat")

  T5=PathFicheroActivo + "Build\_up\_final.dat"

  T6=PathFicheroActivo + "Build\_up\_final\_tall"

  Call Tallar\_feeling73

End If

If R1 = 4 then

  Call CHNCLPCOPY("22-28")

  Call FILECLOSEALL()

  Call DATADELALL(1)



```
Call CHNCLPPASTE (1)
Call DATASAVE(PathFicheroActivo + "Build_up_final.dat")
T5 = PathFicheroActivo + "Build_up_final.dat"
T6 = PathFicheroActivo + "Build_up_final_tall"
Call Tallar_feeling73
```

End If

```
If R1 = 5 then
Call CHNCLPCOPY("29-35")
Call FILECLOSEALL()
Call DATADELALL(1)
Call CHNCLPPASTE (1)
Call DATASAVE(PathFicheroActivo + "Build_up_final.dat")
T5 = PathFicheroActivo + "Build_up_final.dat"
T6 = PathFicheroActivo + "Build_up_final_tall"
Call Tallar_feeling73
```

End If

```
If R1 = 6 then
Call CHNCLPCOPY("36-42")
Call FILECLOSEALL()
Call DATADELALL(1)
Call CHNCLPPASTE (1)
Call DATASAVE(PathFicheroActivo + "Build_up_final.dat")
T5 = PathFicheroActivo + "Build_up_final.dat"
T6 = PathFicheroActivo + "Build_up_final_tall"
Call Tallar_feeling73
```

End If

```
Call PICLOAD("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2.
Macro\Build_up_final.LPD")
Call PICUPDATE()
EXBITSPERPIXELX
= "#ExType:@/@/@ExBitsPerPixJPEG/@ExBitsPerPixTIF/@ExBitsPerPixBMP/@ExBitsPerPixRLE/@E
xBitsPerPixPCX/@ExBitsPerPixPSD/@ExBitsPerPixPNG/@ExBitsPerPixTGA/@ExBitsPerPixEPS/@Ex
BitsPerPixRAS/@ExBitsPerPixWPG/@ExBitsPerPixPCT"
EXQUALITY = 75
EXCOMPRESSTYPEX
= "#ExType:@/@/@ExCompTypJPEG/@ExCompTypTIF/@ExCompTypBMP/@ExCompTypRLE/@E
xCompTypPCX/@ExCompTypPSD/@ExCompTypPNG/@ExCompTypTGA/@ExCompTypEPS/@ExC
ompTypRAS/@ExCompTypWPG/@ExCompTypPCT"
EXPROGRESSIVE = 0
Call PICEXPORT(PathFicheroActivo + "Result_Build_up_feeling.WMF", "WMF", 1, 768, 1024) '...
EXFILENAME, EXTYPE, EXUSERATIO, EXHEIGHT, EXWIDTH, EXBITSPERPIXELX, EXQUALITY, EXCO
MPRESSTYPEX, EXPROGRESSIVE
Call PICSAVE(PathFicheroActivo + "Build_up.lpd")
R1 = 0
End If
L1 = 1
end sub
```

```
'-----
' Extras FSGP
'-----
```



Sub SelecSmooth2()

L1 = 1

Call FormulaCalc("CH('FR\_press') := CH('MC\_press')")

Call FormulaCalc("CH('Vhc\_dec') := CH('Vhc\_dec')\*9.81")

Do While CHNLENGTH(L1) > 0

If CHNNAME(L1) = "Timer\_1" Then

L2 = L1

End If

If CHNNAME(L1) = "Vhc\_dec" Then

L3 = L1

End If

If CHNNAME(L1) = "MC\_press" Then 'MC\_press

L4 = L1

End If

If CHNNAME(L1) = "Ped\_eff" Then

L5 = L1

End If

If CHNNAME(L1) = "Ped\_strk" Then

L6 = L1

End If

If CHNNAME(L1) = "FR\_press" Then 'cambiar FR\_press

L7 = L1

End If

L1 = L1 + 1

Loop

T1 = ((((((((((Str(L2)&","&Str(L3))&","&Str(L4))&","&Str(L5))&","&Str(L6))&","&Str(L7)

Call CHNCLPCOPY(T1)

Call DATADELALL(1)

Call CHNCLPPASTE(1)

End sub

'-----  
'-----

Sub OFFSET2

R2 = 0

L4 = CNo("Ped\_eff")

Do While L4 <= 6

L20 = CHNLENGTH(L4)

L5 = L20 - 50

R1 = 0

L6 = L5

```
Do While L6 < = L20
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/50
Call FormulaCalc("CH(L4): = CH(L4)-R2")
L4 = L4 + 1 ' <<< Step 1 or Step -1
Loop

L4 = CNo("FR_press")
Do While L4 < = 6
  L20 = CHNLENGTH(L4)
  L5 = L20-50
  R1 = 0
  L6 = L5
  Do While L6 < = L20
    R5 = CHD(L6, L4)
    R1 = R1 + R5
    L6 = L6 + 1 ' <<< Step 1 or Step -1
  Loop
  R2 = R1/50
  Call FormulaCalc("CH(L4): = CH(L4)-R2")
  L4 = L4 + 1 ' <<< Step 1 or Step -1
Loop

L4 = CNo("Ped_strk")
Do While L4 < = 6
  L20 = CHNLENGTH(L4)
  L5 = L20-50
  R1 = 0
  L6 = L5
  Do While L6 < = L20
    R5 = CHD(L6, L4)
    R1 = R1 + R5
    L6 = L6 + 1 ' <<< Step 1 or Step -1
  Loop
  R2 = R1/50
  Call FormulaCalc("CH(L4): = CH(L4)-R2")
  L4 = L4 + 1 ' <<< Step 1 or Step -1
Loop

L4 = CNo("Vhc_dec") .....
Do While L4 < = 6 '6
  L20 = CHNLENGTH(L4)
  L5 = L20-50
  R1 = 0
  L6 = L5
  Do While L6 < = L20
    R5 = CHD(L6, L4)
    R1 = R1 + R5
    L6 = L6 + 1 ' <<< Step 1 or Step -1
  Loop
  R2 = R1/50
  Call FormulaCalc("CH(L4): = CH(L4)-R2")
```



```
L4 = L4 + 1 ' <<< Step 1 or Step -1
Loop

end sub

'-----
'-----

Sub tall()

Call CHNSMOOTH(2, 2, 8)
Call CHNSMOOTH(3, 3, 8)
Call CHNSMOOTH(4, 4, 8)
Call CHNSMOOTH(5, 5, 8)

L3 = 1
Do While (CHD(L3, 5)) < 1
  L3 = L3 + 1
Loop
'hem de tallar a 40 i no a 20, es un cas especial
If L3 > 70 Then
  L3 = L3 - 40
  Call DATAAREADEL(1, 1, L3, 6)
End If

L15 = L15 - L3
L8 = CHNLENGTH(1)
Call FormulaCalc("Ch(1): = Ch(1) - Chd(1, 1)")
Call DATAAREADEL(1, L15, L8, 6)

end sub
'-----
'-----

Sub tall2()

Call CHNSMOOTH(2, 2, 8)
Call CHNSMOOTH(3, 3, 8)
Call CHNSMOOTH(4, 4, 8)
Call CHNSMOOTH(5, 5, 8)

L3 = 1
Do While (CHD(L3, 5)) < 1
  L3 = L3 + 1
Loop
'hem de tallar a 40 i no a 20, es un cas especial
If L3 > 70 Then
  L3 = L3 - 40
  Call DATAAREADEL(1, 1, L3, 6)
End If

L8 = CHNLENGTH(1)
Call FormulaCalc("Ch(1): = Ch(1) - Chd(1, 1)")
Call DATAAREADEL(1, 500, L8, 6)
```



end sub

'-----  
' Noms de les imatges  
'-----

Sub imatges()

If L21 = 0 then  
T2 = "FSGP\_50kmh\_50deg"  
end if

If L21 = 1 then  
T2 = "FSGP\_50kmh\_100deg"  
end if

If L21 = 2 then  
T2 = "FSGP\_100kmh\_50deg"  
end if

If L21 = 3 then  
T2 = "FSGP\_100kmh\_100deg"  
end if

If L21 = 4 then  
T2 = "FSGP\_HS\_50deg"  
end if

If L21 = 5 then  
T2 = "FSGP\_HS\_100deg"  
end if

end sub

Sub exportimg()

Call PICLOAD("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2. Macro\50-1  
rapida.LPD")

Call PicUpdate()

Call PICSAVE(PathFicheroActivo + T2&"\_1") '... PICFILE

EXBITSPERPIXELX

= "#ExType:@/@/@ExBitsPerPixJPEG/@ExBitsPerPixTIF/@ExBitsPerPixBMP/@ExBitsPerPixRLE/@E  
xBitsPerPixPCX/@ExBitsPerPixPSD/@ExBitsPerPixPNG/@ExBitsPerPixTGA/@ExBitsPerPixEPS/@Ex  
BitsPerPixRAS/@ExBitsPerPixWPG/@ExBitsPerPixPCT"

EXQUALITY = 75

EXCOMPRESSTYPEX

= "#ExType:@/@/@ExCompTypJPEG/@ExCompTypTIF/@ExCompTypBMP/@ExCompTypRLE/@E  
xCompTypPCX/@ExCompTypPSD/@ExCompTypPNG/@ExCompTypTGA/@ExCompTypEPS/@ExC  
ompTypRAS/@ExCompTypWPG/@ExCompTypPCT"

EXPROGRESSIVE = 0

Call PICEXPORT(PathFicheroActivo + T2&"\_1", "WMF", 1, 768, 1024) '...

EXFILENAME, EXTYPE, EXUSERATIO, EXHEIGTH, EXWIDTH, EXBITSPERPIXELX, EXQUALITY, EXCO  
MPRESSTYPEX, EXPROGRESSIVE

Call PICLOAD("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2. Macro\50-2  
rapida.LPD")

Call PicUpdate()

Call PICSAVE(PathFicheroActivo + T2&"\_2") '... PICFILE

```
EXBITSPERPIXELX
=#ExType:@/@/@ExBitsPerPixJPEG/@ExBitsPerPixTIF/@ExBitsPerPixBMP/@ExBitsPerPixRLE/@E
xBitsPerPixPCX/@ExBitsPerPixPSD/@ExBitsPerPixPNG/@ExBitsPerPixTGA/@ExBitsPerPixEPS/@Ex
BitsPerPixRAS/@ExBitsPerPixWPG/@ExBitsPerPixPCT"
EXQUALITY      = 75
EXCOMPRESSTYPEX
=#ExType:@/@/@ExCompTypJPEG/@ExCompTypTIF/@ExCompTypBMP/@ExCompTypRLE/@E
xCompTypPCX/@ExCompTypPSD/@ExCompTypPNG/@ExCompTypTGA/@ExCompTypEPS/@ExC
ompTypRAS/@ExCompTypWPG/@ExCompTypPCT"
EXPROGRESSIVE  = 0
Call PICEXPORT(PathFicheroActivo + T2&"_2","WMF",1,768,1024)
Call PICLOAD("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2. Macro\General rapida
50.LPD")
Call PICUPDATE()
Call PICSAVE(PathFicheroActivo + T2&"_General")      '... PICFILE
EXBITSPERPIXELX
=#ExType:@/@/@ExBitsPerPixJPEG/@ExBitsPerPixTIF/@ExBitsPerPixBMP/@ExBitsPerPixRLE/@E
xBitsPerPixPCX/@ExBitsPerPixPSD/@ExBitsPerPixPNG/@ExBitsPerPixTGA/@ExBitsPerPixEPS/@Ex
BitsPerPixRAS/@ExBitsPerPixWPG/@ExBitsPerPixPCT"
EXQUALITY      = 75
EXCOMPRESSTYPEX
=#ExType:@/@/@ExCompTypJPEG/@ExCompTypTIF/@ExCompTypBMP/@ExCompTypRLE/@E
xCompTypPCX/@ExCompTypPSD/@ExCompTypPNG/@ExCompTypTGA/@ExCompTypEPS/@ExC
ompTypRAS/@ExCompTypWPG/@ExCompTypPCT"
EXPROGRESSIVE  = 0
Call PICEXPORT(PathFicheroActivo + T2&"_General","WMF",1,768,1024)
end sub

'-----
' DESGLOCE DEL PATH COMPLETO
'-----

'Fichero contiene todo, es decir, path + nombre + extension

Sub noms()

CHNNAME(1) = "Timer_1"
CHNNAME(2) = "Decel"
CHNNAME(3) = "MC_press"
CHNNAME(4) = "Ped_effort"
CHNNAME(5) = "Ped_stroke"
CHNNAME(6) = "FR_press"
CHNCOMMENT(1) = T10
CHNCOMMENT(2) = T10
CHNCOMMENT(3) = T10
CHNCOMMENT(4) = T10
CHNCOMMENT(5) = T10
CHNCOMMENT(6) = T10

End sub

'-----
' Extras build up feeling
'-----

Sub Selec_eficacia2()
```





```
Call FormulaCalc("CH('FR_press') := CH('MC_press')")  
Call FormulaCalc("CH('RR_press') := CH('MC_press')")  
Call FormulaCalc("CH('Vhc_dec') := CH('Vhc_dec')*9.81")
```

```
L1 = 1
```

```
Do While CHNLENGTH(L1) > 0
```

```
  If CHNNAME(L1) = "Timer_1" Then
```

```
    L2 = L1
```

```
  End If
```

```
  If CHNNAME(L1) = "Vhc_spd" Then
```

```
    STATSEL(1) = "No"
```

```
    STATSEL(2) = "No"
```

```
    STATSEL(3) = "No"
```

```
    STATSEL(4) = "No"
```

```
    STATSEL(5) = "No"
```

```
    STATSEL(6) = "Yes"
```

```
    STATSEL(7) = "No"
```

```
    STATSEL(8) = "No"
```

```
    STATSEL(9) = "No"
```

```
    STATSEL(10) = "No"
```

```
    STATSEL(11) = "No"
```

```
    STATSEL(12) = "No"
```

```
    STATSEL(13) = "No"
```

```
    STATSEL(14) = "No"
```

```
    STATSEL(15) = "No"
```

```
    STATSEL(16) = "No"
```

```
    STATSEL(17) = "No"
```

```
    STATSEL(18) = "No"
```

```
    STATSEL(19) = "No"
```

```
    STATSEL(20) = "No"
```

```
    STATSEL(21) = "No"
```

```
    STATSEL(22) = "No"
```

```
    STATCLIPCOPY = 0
```

```
    STATCLIPVALUE = 0
```

```
    STATFORMAT = ""
```

```
  Call STATBLOCKCALC("Channel", "1-50", L1) '... STATDIREC, ROWNOSTR, CHNNOSTR
```

```
  MedSpd = (chdx(1, CNo("Arithm_mean")))
```

```
  Call Chndelete("Arithm_mean")
```

```
  If MedSpd > 0 then
```

```
    L3 = L1
```

```
  End If
```

```
End If
```

```
If CHNNAME(L1) = "Vhc_spd5" Then
```

```
  STATSEL(1) = "No"
```

```
  STATSEL(2) = "No"
```

```
  STATSEL(3) = "No"
```

```
  STATSEL(4) = "No"
```

```
  STATSEL(5) = "No"
```

```
  STATSEL(6) = "Yes"
```

```
  STATSEL(7) = "No"
```

```
  STATSEL(8) = "No"
```

```

STATSEL(9)      = "No"
STATSEL(10)     = "No"
STATSEL(11)     = "No"
STATSEL(12)     = "No"
STATSEL(13)     = "No"
STATSEL(14)     = "No"
STATSEL(15)     = "No"
STATSEL(16)     = "No"
STATSEL(17)     = "No"
STATSEL(18)     = "No"
STATSEL(19)     = "No"
STATSEL(20)     = "No"
STATSEL(21)     = "No"
STATSEL(22)     = "No"
STATCLIPCOPY    = 0
STATCLIPVALUE   = 0
STATFORMAT      = ""

Call STATBLOCKCALC("Channel","1-50",L1) '... STATDIREC,ROWNOSTR,CHNNOSTR
MedSpd = (chdx(1,CNo("Arithm_mean")))
Call Chndelete("Arithm_mean")
If MedSpd > 0 then
    L3=L1
End If
End If
If CHNNAME(L1) = "Vhc_dec" Then
    L4=L1
End If
If CHNNAME(L1) = "FR_press" Then      'FR_press
    L5=L1
End If
If CHNNAME(L1) = "RR_press" Then      'RR_press
    L6=L1
End If
If CHNNAME(L1) = "Ped_eff" Then
    L7=L1
End If
If CHNNAME(L1) = "Ped_strk" Then
    L8=L1
End If
L1=L1 + 1
Loop
T1 = ((((((((((Str(L2)&","&Str(L3))&","&Str(L4))&","&Str(L5))&","&Str(L6))&","&Str(L7))&","&Str(L8)
(L8)
Call CHNCLPCOPY(T1)
Call DATADELALL(1)
Call CHNCLPPASTE(1)
end sub
'-----
'-----

Sub OffseDarrere1ch_ef()
L4=3 'canal offset Darrere
R2=0
L3=CHNLENGTH(L4)
L2=L3-50
R1=0

```

```
L6=L2
Do While L6 < =L3
  R5=CHD(L6, L4)
  R1=R1+R5
  L6=L6+1 ' <<< Step 1 or Step -1
Loop
R2=R1/50
Call FormulaCalc("CH(L4):=CH(L4)-R2")
end sub
'-----
'-----
Sub OffsetDavant1cheficacia()

L4=4 'canal offset Davant
R2=0
L3=CHNLENGTH(L4)
L3=50
R1=0
L6=1
Do While L6 < =L3
  R5=CHD(L6, L4)
  R1=R1+R5
  L6=L6+1 ' <<< Step 1 or Step -1
Loop
R2=R1/50
Call FormulaCalc("CH(L4):=CH(L4)-R2")

L4=4 'canal offset Davant NOTA tiene k ser un 5
R2=0
L3=CHNLENGTH(L4)
L3=50
R1=0
L6=1
Do While L6 < =L3
  R5=CHD(L6, L4)
  R1=R1+R5
  L6=L6+1 ' <<< Step 1 or Step -1
Loop
R2=R1/50
Call FormulaCalc("CH(L4):=CH(L4)-R2")

L4=6 'canal offset Davant
R2=0
L3=CHNLENGTH(L4)
L3=50
R1=0
L6=1
Do While L6 < =L3
  R5=CHD(L6, L4)
  R1=R1+R5
  L6=L6+1 ' <<< Step 1 or Step -1
Loop
R2=R1/50
Call FormulaCalc("CH(L4):=CH(L4)-R2")

L4=7 'canal offset Davant
```



```
R2 = 0
L3 = CHNLENGTH(L4)
L3 = 50
R1 = 0
L6 = 1
Do While L6 <= L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/50
Call FormulaCalc("CH(L4): = CH(L4)-R2")
end sub
'-----
'-----

Sub noms_eff()
CHNNAME(1) = "Timer_1"
CHNNAME(2) = "Vhc_spd"
CHNNAME(3) = "Vhc_dec"
CHNNAME(4) = "FR_press"
CHNNAME(5) = "RL_press"
CHNNAME(6) = "Ped_eff"
CHNNAME(7) = "Ped_strk"
end sub
'-----
'-----

Sub Tallar_feeling73()
Seglinia = 1

Do

  IniTall = Find("Ch('Ped_strk') > 20)", Seglinia)
  Seglinia = IniTall
  IniTall = IniTall - 200

  FinalTall = Find("Ch('Ped_strk') < 10)", Seglinia)
  Seglinia = FinalTall
  FinalTall = FinalTall - IniTall + 100
  If IniTall > -200 then

    k = 1
    while cl(k) > 0
      k = k + 1
    wend
    k = k - 1

    Call DATAAREACLPCOPY(1, 7, IniTall, FinalTall)
    Call DATADELALL(1)
    Call DATAAREACLPPASTE(1, 1)
    R30 = chdx(1, 1)
    Call FormulaCalc("ch(1): = ch(1)-R30")'para poner el tiempo a "0"

    Call DATASAVE(T6)

    Call DATALOAD(T5)
```



```
End If
Loop Until IniTall=-200
Call Dataload(T6)
end sub
'-----
'
'                               Pitch & dive analisis
'-----
Sub PDA()

Call FILECLOSEALL() 'parece innecesario, pero no lo quites INTRIGADO? !!!!!
AutoDrvUser = "D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\"
Call FileNameGet("ANY", "FileRead", "*.DAT", "*.DAT", "Seleccionados", "Yes", "SELECCIONAR
ARXIOUS FSGP BODY POSITIION")

If (DlgState = "IDCancel") Then
    Call AutoQuit("Que fas !!! l'has cagat Felip (no s'ha fet res)")
End If

R10 = 835
R11 = 560
R12 = 970
R13 = 1030
R14 = 590
R15 = 1170

Call SudDefLoad("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2. Macro\Cotxe.sud")
Call SudDlgShow("cotxe")

Call FILEOPEN("Seleccionados", 2)
i = 1 ' Linea que estamos leyendo del fichero "Seleccionados", que contiene los
      ' nombres de los ficheros a transformar

FicheroActivo = FR("Seleccionados", i)

Call DATADELALL(1)          '... HEADERDEL
Do While FicheroActivo < > "EOF"

    Call DesglocePath(FicheroActivo, NombreFicheroActivo, PathFicheroActivo, Extension)
    Call DATALOAD(FicheroActivo)

Call Pitch_Body_position

NewFolder2 = PathFicheroActivo + "Body_Graf\"
Call CreateFolder(NewFolder2)
GraphDrvUser = NewFolder2
T3 = NombreFicheroActivo
'Call PICSAVEAS(T3)
Call Picupdate()
EXBITS PERPIXELX
= "#ExType:@/@/@ExBitsPerPixJPEG/@ExBitsPerPixTIF/@ExBitsPerPixBMP/@ExBitsPerPixRLE/@E
xBitsPerPixPCX/@ExBitsPerPixPSD/@ExBitsPerPixPNG/@ExBitsPerPixTGA/@ExBitsPerPixEPS/@Ex
BitsPerPixRAS/@ExBitsPerPixWPG/@ExBitsPerPixPCT"
EXQUALITY = 75
```



```
EXCOMPRESSTYPEX
=#ExType:@/@/@ExCompTypJPEG/@ExCompTypTIF/@ExCompTypBMP/@ExCompTypRLE/@E
xCompTypPCX/@ExCompTypPSD/@ExCompTypPNG/@ExCompTypTGA/@ExCompTypEPS/@ExC
ompTypRAS/@ExCompTypWPG/@ExCompTypPCT"
EXPROGRESSIVE = 0
Call PICEXPORT(T3,"WMF",1,768,1024) '...
EXFILENAME,EXTYPE,EXUSERATIO,EXHEIGHT,EXWIDTH,EXBITSPERPIXELX,EXQUALITY,EXCO
MPRESSTYPEX,EXPROGRESSIVE
```

```
'Call DATASAVE(FicheroActivo)      '... DATAFILE
i=i+1
FicheroActivo = FR("Seleccionados", i)
```

```
Loop
L1 = 2
end sub
```

```
'-----
'Calculs de posicio del vehicle
'-----
Sub Pitch_Body_position()
```

```
L4 = Cno("Pitch") 'canal offset Darrere
R2 = 0
L3 = CHNLENGTH(L4)
L2 = L3-50
R1 = 0
L6 = L2
Do While L6 <= L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/51
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```

```
'-----
'-----
'.... Autosequence - End
'-----
```

```
L4 = Cno("Front") 'canal offset Darrere
R2 = 0
L3 = CHNLENGTH(L4)
L2 = L3-50
R1 = 0
L6 = L2
Do While L6 <= L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
```

```
Loop
R2 = R1/51
Call FormulaCalc("CH(L4): = CH(L4)-R2")

'.....
'.....
'.... Autosequence - End
'.....
```

```
L4 = Cno("Rear") 'canal offset Darrere
R2 = 0
L3 = CHNLENGTH(L4)
L2 = L3-50
R1 = 0
L6 = L2
Do While L6 <= L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/51
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```

```
Call FormulaCalc("Ch ('Ang_rad'): = (arctan((Ch ('Rear')-Ch ('Front'))/(R12 + R13))))")
Call CHNSMOOTH("Rear", "Rear", 8, "maxNumber") '... Y,E,SMOOTHWIDTH,SMOOTHTYPE
Call CHNSMOOTH("Front", "Front", 8, "maxNumber") '... Y,E,SMOOTHWIDTH,SMOOTHTYPE
Call CHNFILTCALC("Timer_1", "Ang_rad", "Ang_rad", "IIR", "Butterworth", "Low
pass", 7, 12, 0, 0, 1.2, 25, "Hamming", 1, 1) '...
X,Y,E,FILTSTRUC,FILTSTYLE,FILTTYPE,FILTDEGREE,FILTLIMIT,FILTLOWLIMIT,FILTUPPLIMIT,FILT
WAVE,FILTSAMPLES,FILTWNDFCT,FILTZEROPHASE,FILTCORRECTION
Call CHNFILTCALC("Timer_1", "Pitch", "Pitch", "IIR", "Butterworth", "Low
pass", 7, 12, 0, 0, 1.2, 25, "Hamming", 1, 1) '...
X,Y,E,FILTSTRUC,FILTSTYLE,FILTTYPE,FILTDEGREE,FILTLIMIT,FILTLOWLIMIT,FILTUPPLIMIT,FILT
WAVE,FILTSAMPLES,FILTWNDFCT,FILTZEROPHASE,FILTCORRECTION
Call CHNSMOOTH("Vhc_dec", "Vhc_dec", 8, "maxNumber") '...
Y,E,SMOOTHWIDTH,SMOOTHTYPE
```

```
L4 = Cno("Ang_rad") 'canal offset Darrere
R2 = 0
L3 = CHNLENGTH(L4)
L2 = L3-50
R1 = 0
L6 = L2
Do While L6 <= L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/51
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```

```

Call FormulaCalc("Ch ('Ang_deg'):= Ch ('Ang_rad')*(-57.2957)")
'.....

'
                CALCUL DELS PUNTS DE DECELERACIO / ALTURA
'.....

Call FormulaCalc("Ch ('high_0') := ((R12 + R13)/((Ch ('Front'))-Ch ('Rear')))* Ch ('Front')")
Call FormulaCalc("Ch ('FR_RR_H2') := (Ch ('Front'))-Ch ('Rear')")
Call CHNSMOOTH("high_0","high_0",8,"maxNumber") '...
Y,E,SMOOTHWIDTH,SMOOTHTYPE
Call FormulaCalc("Ch ('Top_Fr_h') := (sin(Ch ('Ang_rad'))*((R10 + R11 + (Ch('high_0')))))")
Call FormulaCalc("Ch ('Fr_Ax_h') := (sin(Ch ('Ang_rad'))*((R11 + (Ch('high_0')))))")
Call FormulaCalc("Ch ('Dr_h') := (sin(Ch ('Ang_rad'))*(((Ch('high_0'))-R12))))")
Call FormulaCalc("Ch ('Rr_Ax_h') := (sin(Ch ('Ang_rad'))*(((Ch('high_0'))-R12-R13-R14))))")
Call FormulaCalc("Ch ('Top_Rr_h') := (sin(Ch ('Ang_rad'))*(((Ch('high_0'))-R12-R13-R14-
R15))))")

If Cmax("Vhc_dec") = < 5 then
    Call FormulaCalc("Ch ('Vhc_dec') := Ch ('Vhc_dec')*9.81")
End if

                R20 = 1
                L5 = 0
                L1 = 1
                LI = 1

                Call CHNALLOC("Dist",1,1)          '...
GHDCHNNAME,GHDCHNLENGTH,CHNNO
                CL("Dist") = 5
                Chdx(1,cno("Dist")) = -(R10 + R11 + R12)
                Chdx(2,cno("Dist")) = -(R11 + R12)
                Chdx(3,cno("Dist")) = L5
                Chdx(4,cno("Dist")) = R13 + R14
                Chdx(5,cno("Dist")) = R13 + R14 + R15

do while R20 = < Cmax("Vhc_dec")

    L5 = CNo("Vhc_dec")
    FRL1 = L1
    T1 = "High_ "&FRL1&"m/s2"
    LI = Find("ch(L5) > R20", LI)
    Call CHNALLOC(T1,1,1)          '... GHDCHNNAME,GHDCHNLENGTH,CHNNO
    CL(T1) = 5
    Chdx(1,cno(T1)) = chdx(LI,CNo("Top_Fr_h"))
    Chdx(2,cno(T1)) = chdx(LI,CNo("Fr_Ax_h"))
    Chdx(3,cno(T1)) = chdx(LI,CNo("Dr_h"))
    Chdx(4,cno(T1)) = chdx(LI,CNo("Rr_Ax_h"))
    Chdx(5,cno(T1)) = chdx(LI,CNo("Top_Rr_h"))

    L1 = L1 + 1
    R20 = R20 + 1

```



loop

```
'Canals per als graf de pitch/dec i dec/high
  If Cmax("Vhc_spd") > 150 then
    PitchF = Find("ch('Vhc_spd') < 100", 1)
  else
    PitchF = Find("ch('Vhc_spd') < 5", 1)
  end if
  PitchI = Find("ch('Ped_eff') > 1", 1)
  PitchF = PitchF - PitchI
  PitchI = PitchI - 50
  L20 = Cno("Vhc_dec")
  L21 = Cno(T1)
  Call DATABLCOPY(Str(L20), PitchI, PitchF, Str(L21 + 1), 1)
  L20 = Cno("Ang_deg")
  Call DATABLCOPY(Str(L20), PitchI, PitchF, Str(L21 + 2), 1)
  L20 = Cno("Top_Fr_h")
  L21 = Cno(T1)
  Call DATABLCOPY(Str(L20) & "-" & Str(L20 + 4), PitchI, PitchF, Str(L21 + 3) & "-"
& Str(L21 + 7), 1)    '... CHNNOSTR, CHNROW, VALNO, CHNNOSTR1, TARGETLINE
  Cn(L21 + 1) = ("Decel")
  Cn(L21 + 2) = ("Pich_1")
  Cn(L21 + 3) = ("Front_top")
  Cn(L21 + 4) = ("Front_axle")
  Cn(L21 + 5) = ("Driver")
  Cn(L21 + 6) = ("Rear_axle")
  Cn(L21 + 7) = ("Rear_top")
```

```
'-----
'          Graf
'-----
```

```
If 10 = < Cmax("Vhc_dec") then
Call PICLOAD("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2.
Macro\High_pich_10m_s2.LPD")
Call graf10m_s2
End if
```

```
If 9 = < Cmax("Vhc_dec") and Cmax("Vhc_dec") < 10 then
Call PICLOAD("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2.
Macro\High_pich_9m_s2.LPD")
Call graf9m_s2
```

End if

```
If 8 = < Cmax("Vhc_dec") and Cmax("Vhc_dec") < 9 then
Call PICLOAD("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2.
Macro\High_pich_8m_s2.LPD")
Call graf8m_s2
```

End if

End sub

```
'-----
```



```
'          Graf High_pich_10m_s2
'-----
Sub graf10m_s2()

Call GRAPHObjOpen("2DAxis5")
Call GRAPHObjOpen("2DObj2_Curve1")
  D2CCHNX      = "Decel"
  D2CCHNY      = "Front_top"
  D2CCHNY1     = "Timer_1"
  D2CCONSTX    = NOVALUE
  D2CCONSTY    = NOVALUE
  D2CAXISPAIRNO = 1
  D2CCURVETYPE = "Line"
  D2CURVECOLOR = "black"
  D2CURVECOLORRGB = 33554432
  D2CURVESPECCOLOR = "red"
  D2CURVESPECCORGB = 33554687
  D2LEGDRAW    = 1
  D2LEGPDRAW   = 0
  D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve1")
Call GRAPHObjOpen("2DObj2_Curve2")
  D2CCHNX      = "Decel"
  D2CCHNY      = "Front_axle"
  D2CCHNY1     = "Timer_1"
  D2CCONSTX    = NOVALUE
  D2CCONSTY    = NOVALUE
  D2CAXISPAIRNO = 1
  D2CCURVETYPE = "Line"
  D2CURVECOLOR = "red"
  D2CURVECOLORRGB = 33554687
  D2CURVESPECCOLOR = "red"
  D2CURVESPECCORGB = 33554687
  D2LEGDRAW    = 1
  D2LEGPDRAW   = 0
  D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve2")
Call GRAPHObjOpen("2DObj2_Curve3")
  D2CCHNX      = "Decel"
  D2CCHNY      = "Driver"
  D2CCHNY1     = "Timer_1"
  D2CCONSTX    = NOVALUE
  D2CCONSTY    = NOVALUE
  D2CAXISPAIRNO = 1
  D2CCURVETYPE = "Line"
  D2CURVECOLOR = "green"
  D2CURVECOLORRGB = 33619712
  D2CURVESPECCOLOR = "red"
  D2CURVESPECCORGB = 33554687
  D2LEGDRAW    = 1
  D2LEGPDRAW   = 0
  D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve3")
Call GRAPHObjOpen("2DObj2_Curve4")
  D2CCHNX      = "Decel"
  D2CCHNY      = "Rear_axle"
```

```
D2CCHNY1      = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "blue"
D2CURVECOLORRGB = 50266112
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve4")
Call GRAPHObjOpen("2DObj2_Curve5")
D2CCHNX      = "Decel"
D2CCHNY      = "Rear_top"
D2CCHNY1     = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "violet"
D2CURVECOLORRGB = 50266367
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve5")
Call GRAPHObjClose("2DAxis5")
```

```
Call GRAPHObjOpen("2DAxis6")
Call GRAPHObjOpen("2DObj6_Curve1")
D2CCHNX      = "Decel"
D2CCHNY      = "Pich_1"
D2CCHNY1     = 0
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "black"
D2CURVECOLORRGB = 33554432
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 0
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj6_Curve1")
Call GRAPHObjClose("2DAxis6")
```

```
Call GRAPHObjOpen("2DAxis1")
Call GRAPHObjOpen("2DObj1_Curve7")
D2CCHNX      = "Dist"
D2CCHNY      = "High_1m/s2"
```

```
D2CCHNY1      = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "black"
D2CURVECOLORRGB = 33554432
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve7")
Call GRAPHObjOpen("2DObj1_Curve9")
D2CCHNX      = "Dist"
D2CCHNY      = "High_2m/s2"
D2CCHNY1     = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "red"
D2CURVECOLORRGB = 33554687
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve9")
Call GRAPHObjOpen("2DObj1_Curve10")
D2CCHNX      = "Dist"
D2CCHNY      = "High_3m/s2"
D2CCHNY1     = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "green"
D2CURVECOLORRGB = 33619712
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve10")
Call GRAPHObjOpen("2DObj1_Curve12")
D2CCHNX      = "Dist"
D2CCHNY      = "High_4m/s2"
D2CCHNY1     = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "blue"
D2CURVECOLORRGB = 50266112
D2CURVESPECCOLOR = "red"
```

```
D2CURVESPECCORGB = 33554687
D2LEGDRAW = 1
D2LEGPDRAW = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve12")
Call GRAPHObjOpen("2DObj1_Curve13")
D2CCHNX = "Dist"
D2CCHNY = "High_5m/s2"
D2CCHNY1 = "Timer_1"
D2CCONSTX = NOVALUE
D2CCONSTY = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "violet"
D2CURVECOLORRGB = 50266367
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW = 1
D2LEGPDRAW = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve13")
Call GRAPHObjOpen("2DObj1_Curve15")
D2CCHNX = "Dist"
D2CCHNY = "High_6m/s2"
D2CCHNY1 = "Timer_1"
D2CCONSTX = NOVALUE
D2CCONSTY = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "turquoise"
D2CURVECOLORRGB = 50331392
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW = 1
D2LEGPDRAW = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve15")
Call GRAPHObjOpen("2DObj1_Curve16")
D2CCHNX = "Dist"
D2CCHNY = "High_7m/s2"
D2CCHNY1 = "Timer_1"
D2CCONSTX = NOVALUE
D2CCONSTY = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "grey"
D2CURVECOLORRGB = 46186688
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW = 1
D2LEGPDRAW = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve16")
Call GRAPHObjOpen("2DObj1_Curve17")
D2CCHNX = "Dist"
D2CCHNY = "High_8m/s2"
```

```

D2CCHNY1      = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "yell."
D2CURVECOLORRGB = 33619967
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve17")
Call GRAPHObjOpen("2DObj1_Curve18")
D2CCHNX      = "Dist"
D2CCHNY      = "High_9m/s2"
D2CCHNY1     = 0
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "dark red"
D2CURVECOLORRGB = 33554560
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve18")
Call GRAPHObjOpen("2DObj1_Curve1")
D2CCHNX      = "Dist"
D2CCHNY      = "High_10m/s2"
D2CCHNY1     = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "dark green"
D2CURVECOLORRGB = 33587200
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve1")
Call GRAPHObjClose("2DAxis1")
Call PICUPDATE()
End sub

```

```

'-----
'           Graf High_pich_9m_s2
'-----
Sub graf9m_s2()
Call GRAPHObjOpen("2DAxis5")
Call GRAPHObjOpen("2DObj2_Curve1")
D2CCHNX      = "Decel"

```



```
D2CCHNY      = "Front_top"
D2CCHNY1     = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "black"
D2CURVECOLORRGB = 33554432
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve1")
Call GRAPHObjOpen("2DObj2_Curve2")
D2CCHNX      = "Decel"
D2CCHNY      = "Front_axle"
D2CCHNY1     = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "red"
D2CURVECOLORRGB = 33554687
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve2")
Call GRAPHObjOpen("2DObj2_Curve3")
D2CCHNX      = "Decel"
D2CCHNY      = "Driver"
D2CCHNY1     = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "green"
D2CURVECOLORRGB = 33619712
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve3")
Call GRAPHObjOpen("2DObj2_Curve4")
D2CCHNX      = "Decel"
D2CCHNY      = "Rear_axle"
D2CCHNY1     = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "blue"
D2CURVECOLORRGB = 50266112
```

```
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW      = 1
D2LEGPDRAW     = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve4")
Call GRAPHObjOpen("2DObj2_Curve5")
D2CCHNX        = "Decel"
D2CCHNY        = "Rear_top"
D2CCHNY1       = "Timer_1"
D2CCONSTX      = NOVALUE
D2CCONSTY      = NOVALUE
D2CAXISPAIRNO  = 1
D2CCURVETYPE   = "Line"
D2CURVECOLOR   = "violet"
D2CURVECOLORRGB = 50266367
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW      = 1
D2LEGPDRAW     = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve5")
Call GRAPHObjClose("2DAxis5")
```

```
Call GRAPHObjOpen("2DAxis6")
Call GRAPHObjOpen("2DObj6_Curve1")
D2CCHNX        = "Decel"
D2CCHNY        = "Pich_1"
D2CCHNY1       = 0
D2CCONSTX      = NOVALUE
D2CCONSTY      = NOVALUE
D2CAXISPAIRNO  = 1
D2CCURVETYPE   = "Line"
D2CURVECOLOR   = "black"
D2CURVECOLORRGB = 33554432
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW      = 0
D2LEGPDRAW     = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj6_Curve1")
Call GRAPHObjClose("2DAxis6")
```

```
Call GRAPHObjOpen("2DAxis1")
Call GRAPHObjOpen("2DObj1_Curve7")
D2CCHNX        = "Dist"
D2CCHNY        = "High_1m/s2"
D2CCHNY1       = "Timer_1"
D2CCONSTX      = NOVALUE
D2CCONSTY      = NOVALUE
D2CAXISPAIRNO  = 1
D2CCURVETYPE   = "Line"
D2CURVECOLOR   = "black"
D2CURVECOLORRGB = 33554432
```



```
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW = 1
D2LEGPDRAW = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve7")
Call GRAPHObjOpen("2DObj1_Curve9")
D2CCHNX = "Dist"
D2CCHNY = "High_2m/s2"
D2CCHNY1 = "Timer_1"
D2CCONSTX = NOVALUE
D2CCONSTY = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "red"
D2CURVECOLORRGB = 33554687
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW = 1
D2LEGPDRAW = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve9")
Call GRAPHObjOpen("2DObj1_Curve10")
D2CCHNX = "Dist"
D2CCHNY = "High_3m/s2"
D2CCHNY1 = "Timer_1"
D2CCONSTX = NOVALUE
D2CCONSTY = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "green"
D2CURVECOLORRGB = 33619712
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW = 1
D2LEGPDRAW = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve10")
Call GRAPHObjOpen("2DObj1_Curve12")
D2CCHNX = "Dist"
D2CCHNY = "High_4m/s2"
D2CCHNY1 = "Timer_1"
D2CCONSTX = NOVALUE
D2CCONSTY = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "blue"
D2CURVECOLORRGB = 50266112
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW = 1
D2LEGPDRAW = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve12")
Call GRAPHObjOpen("2DObj1_Curve13")
D2CCHNX = "Dist"
```

```
D2CCHNY      = "High_5m/s2"
D2CCHNY1     = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "violet"
D2CURVECOLORRGB = 50266367
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve13")
Call GRAPHObjOpen("2DObj1_Curve15")
D2CCHNX      = "Dist"
D2CCHNY      = "High_6m/s2"
D2CCHNY1     = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "turquoise"
D2CURVECOLORRGB = 50331392
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve15")
Call GRAPHObjOpen("2DObj1_Curve16")
D2CCHNX      = "Dist"
D2CCHNY      = "High_7m/s2"
D2CCHNY1     = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "grey"
D2CURVECOLORRGB = 46186688
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve16")
Call GRAPHObjOpen("2DObj1_Curve17")
D2CCHNX      = "Dist"
D2CCHNY      = "High_8m/s2"
D2CCHNY1     = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "yell."
D2CURVECOLORRGB = 33619967
```

```
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW      = 1
D2LEGPDRAW     = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve17")
Call GRAPHObjOpen("2DObj1_Curve18")
D2CCHNX        = "Dist"
D2CCHNY        = "High_9m/s2"
D2CCHNY1       = 0
D2CCONSTX      = NOVALUE
D2CCONSTY      = NOVALUE
D2CAXISPAIRNO  = 1
D2CCURVETYPE   = "Line"
D2CURVECOLOR   = "dark red"
D2CURVECOLORRGB = 33554560
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW      = 1
D2LEGPDRAW     = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve18")
```

```
Call GRAPHObjClose("2DAxis1")
Call PICUPDATE()
End sub
```

```
'-----
'           Graf High_pich_8m_s2
'-----
```

```
Sub graf8m_s2()
Call GRAPHObjOpen("2DAxis5")
Call GRAPHObjOpen("2DObj2_Curve1")
D2CCHNX        = "Decel"
D2CCHNY        = "Front_top"
D2CCHNY1       = "Timer_1"
D2CCONSTX      = NOVALUE
D2CCONSTY      = NOVALUE
D2CAXISPAIRNO  = 1
D2CCURVETYPE   = "Line"
D2CURVECOLOR   = "black"
D2CURVECOLORRGB = 33554432
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW      = 1
D2LEGPDRAW     = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve1")
Call GRAPHObjOpen("2DObj2_Curve2")
D2CCHNX        = "Decel"
D2CCHNY        = "Front_axle"
D2CCHNY1       = "Timer_1"
D2CCONSTX      = NOVALUE
D2CCONSTY      = NOVALUE
D2CAXISPAIRNO  = 1
D2CCURVETYPE   = "Line"
```

```
D2CURVECOLOR      = "red"
D2CURVECOLORRGB   = 33554687
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW         = 1
D2LEGPDRAW        = 0
D2USECOMMONXCHN  = 0
Call GRAPHObjClose("2DObj2_Curve2")
Call GRAPHObjOpen("2DObj2_Curve3")
D2CCHNX           = "Decel"
D2CCHNY           = "Driver"
D2CCHNY1          = "Timer_1"
D2CCONSTX         = NOVALUE
D2CCONSTY         = NOVALUE
D2CAXISPAIRNO     = 1
D2CCURVETYPE      = "Line"
D2CURVECOLOR      = "green"
D2CURVECOLORRGB   = 33619712
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW         = 1
D2LEGPDRAW        = 0
D2USECOMMONXCHN  = 0
Call GRAPHObjClose("2DObj2_Curve3")
Call GRAPHObjOpen("2DObj2_Curve4")
D2CCHNX           = "Decel"
D2CCHNY           = "Rear_axle"
D2CCHNY1          = "Timer_1"
D2CCONSTX         = NOVALUE
D2CCONSTY         = NOVALUE
D2CAXISPAIRNO     = 1
D2CCURVETYPE      = "Line"
D2CURVECOLOR      = "blue"
D2CURVECOLORRGB   = 50266112
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW         = 1
D2LEGPDRAW        = 0
D2USECOMMONXCHN  = 0
Call GRAPHObjClose("2DObj2_Curve4")
Call GRAPHObjOpen("2DObj2_Curve5")
D2CCHNX           = "Decel"
D2CCHNY           = "Rear_top"
D2CCHNY1          = "Timer_1"
D2CCONSTX         = NOVALUE
D2CCONSTY         = NOVALUE
D2CAXISPAIRNO     = 1
D2CCURVETYPE      = "Line"
D2CURVECOLOR      = "violet"
D2CURVECOLORRGB   = 50266367
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW         = 1
D2LEGPDRAW        = 0
D2USECOMMONXCHN  = 0
Call GRAPHObjClose("2DObj2_Curve5")
```

Call GRAPHObjClose("2DAxis5")

```
Call GRAPHObjOpen("2DAxis6")
Call GRAPHObjOpen("2DObj6_Curve1")
D2CCHNX      = "Decel"
D2CCHNY      = "Pich_1"
D2CCHNY1     = 0
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "black"
D2CURVECOLORRGB = 33554432
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 0
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj6_Curve1")
Call GRAPHObjClose("2DAxis6")
```

```
Call GRAPHObjOpen("2DAxis1")
Call GRAPHObjOpen("2DObj1_Curve7")
D2CCHNX      = "Dist"
D2CCHNY      = "High_1m/s2"
D2CCHNY1     = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "black"
D2CURVECOLORRGB = 33554432
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve7")
Call GRAPHObjOpen("2DObj1_Curve9")
D2CCHNX      = "Dist"
D2CCHNY      = "High_2m/s2"
D2CCHNY1     = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "red"
D2CURVECOLORRGB = 33554687
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve9")
```

```
Call GRAPHObjOpen("2DObj1_Curve10")
D2CCHNX      = "Dist"
D2CCHNY      = "High_3m/s2"
D2CCHNY1     = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "green"
D2CURVECOLORRGB = 33619712
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve10")
Call GRAPHObjOpen("2DObj1_Curve12")
D2CCHNX      = "Dist"
D2CCHNY      = "High_4m/s2"
D2CCHNY1     = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "blue"
D2CURVECOLORRGB = 50266112
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve12")
Call GRAPHObjOpen("2DObj1_Curve13")
D2CCHNX      = "Dist"
D2CCHNY      = "High_5m/s2"
D2CCHNY1     = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "violet"
D2CURVECOLORRGB = 50266367
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve13")
Call GRAPHObjOpen("2DObj1_Curve15")
D2CCHNX      = "Dist"
D2CCHNY      = "High_6m/s2"
D2CCHNY1     = "Timer_1"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
```



```
D2CURVECOLOR = "turquoise"  
D2CURVECOLORRGB = 50331392  
D2CURVESPECCOLOR = "red"  
D2CURVESPECCORGB = 33554687  
D2LEGDRAW = 1  
D2LEGPDRAW = 0  
D2USECOMMONXCHN = 0  
Call GRAPHObjClose("2DObj1_Curve15")  
Call GRAPHObjOpen("2DObj1_Curve16")  
D2CCHNX = "Dist"  
D2CCHNY = "High_7m/s2"  
D2CCHNY1 = "Timer_1"  
D2CCONSTX = NOVALUE  
D2CCONSTY = NOVALUE  
D2CAXISPAIRNO = 1  
D2CCURVETYPE = "Line"  
D2CURVECOLOR = "grey"  
D2CURVECOLORRGB = 46186688  
D2CURVESPECCOLOR = "red"  
D2CURVESPECCORGB = 33554687  
D2LEGDRAW = 1  
D2LEGPDRAW = 0  
D2USECOMMONXCHN = 0  
Call GRAPHObjClose("2DObj1_Curve16")  
Call GRAPHObjOpen("2DObj1_Curve17")  
D2CCHNX = "Dist"  
D2CCHNY = "High_8m/s2"  
D2CCHNY1 = "Timer_1"  
D2CCONSTX = NOVALUE  
D2CCONSTY = NOVALUE  
D2CAXISPAIRNO = 1  
D2CCURVETYPE = "Line"  
D2CURVECOLOR = "yell."  
D2CURVECOLORRGB = 33619967  
D2CURVESPECCOLOR = "red"  
D2CURVESPECCORGB = 33554687  
D2LEGDRAW = 1  
D2LEGPDRAW = 0  
D2USECOMMONXCHN = 0  
Call GRAPHObjClose("2DObj1_Curve17")  
Call GRAPHObjClose("2DAxis1")
```

```
Call PICUPDATE()  
End sub
```

```
-----  
:  
:  
: Stright line stability  
:  
-----
```

```
Sub SLS()
```

```
Call Picload ("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2. Macro\SLS &  
mapping.LPD")
```

```
Call FILECLOSEALL() 'parece innecesario, pero no lo quites INTRIGADO? !!!!!
AutoDrvUser = "D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\"
Call FileNameGet("ANY", "FileRead", "*.DAT", "*.DAT", "Seleccionados","Yes" , "SELECCIONAR
FICHEROS STRAIGHT LINE STABILITY")

If (DlgState = "IDCancel") Then
    Call AutoQuit("NO FUNCIONA!!!!")
End If

B1 = false
B2 = false
B3 = true
B4 = false
B5 = false

SudDefLoad("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2. Macro\Deviation.sud")
SudDlgShow("Main")

If (DlgState = "IDCancel") Then
    Call AutoQuit("NO FUNCIONA!!!!")
End If

Call FILEOPEN("Seleccionados", 2)
i = 1 ' Linea que estamos leyendo del fichero "Seleccionados", que contiene los
      ' nombres de los ficheros a transformar

FicheroActivo = FR("Seleccionados", i)

Call DATADELALL(1)          '... HEADERDEL
Do While FicheroActivo < > "EOF"

    Call DesglocePath(FicheroActivo, NombreFicheroActivo, PathFicheroActivo, Extension)
    Call DATALOAD(FicheroActivo)

Call Calc_offset_mapping

CC("time") = NombreFicheroActivo

Call Graf_SLS

NewFolder2 = PathFicheroActivo + "Straight line stability & Track mapping\"
Call CreateFolder(NewFolder2)
GraphDrvUser = NewFolder2
T3 = NombreFicheroActivo
'Call PICSAVEAS(T3)
Call Picupdate()
EXBITS PER PIXELX
= "#ExType:@/@/@ExBitsPerPixJPEG/@ExBitsPerPixTIF/@ExBitsPerPixBMP/@ExBitsPerPixRLE/@E
xBitsPerPixPCX/@ExBitsPerPixPSD/@ExBitsPerPixPNG/@ExBitsPerPixTGA/@ExBitsPerPixEPS/@Ex
BitsPerPixRAS/@ExBitsPerPixWPG/@ExBitsPerPixPCT"
EXQUALITY = 75
```





```
EXCOMPRESSTYPEX
=#ExType:@/@/@ExCompTypJPEG/@ExCompTypTIF/@ExCompTypBMP/@ExCompTypRLE/@E
xCompTypPCX/@ExCompTypPSD/@ExCompTypPNG/@ExCompTypTGA/@ExCompTypEPS/@ExC
ompTypRAS/@ExCompTypWPG/@ExCompTypPCT"
EXPROGRESSIVE = 0
Call PICEXPORT(T3,"WMF",1,768,1024) '...
EXFILENAME,EXTYPE,EXUSERATIO,EXHEIGHT,EXWIDTH,EXBITSPERPIXELX,EXQUALITY,EXCO
MPRESSTYPEX,EXPROGRESSIVE

'Call DATASAVE(FicheroActivo)      '... DATAFILE
i=i+1
FicheroActivo = FR("Seleccionados", i)

Loop
L1 = 3
end sub
'-----
' Calculs, offset & track mapping
'-----
Sub Calc_offset_mapping()

        If cno("Vhc_spd5") <> 0 then
            cn("Vhc_spd5") = ("Vhc_spd")
        end if

        If Cmax("Vhc_dec") = < 5 then
            Call FormulaCalc("Ch ('Vhc_dec') := Ch ('Vhc_dec')*9.81")
        End if

L4 = Cno("Heading") 'canal offset Davant
R2 = 0
L3 = CHNLENGTH(L4)
L3 = 50
R1 = 0
L6 = 1
Do While L6 <= L3
    R5 = CHD(L6, L4)
    R1 = R1 + R5
    L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/50
Call FormulaCalc("CH(L4):= CH(L4)-R2")

L4 = Cno("Ped_eff") 'canal offset Davant
R2 = 0
L3 = CHNLENGTH(L4)
L3 = 50
R1 = 0
L6 = 1
Do While L6 <= L3
    R5 = CHD(L6, L4)
    R1 = R1 + R5
```



```
L6 = L6 + 1 ' <<< Step 1 or Step -1  
Loop  
R2 = R1/50  
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```

```
L4 = Cno("MC_press") 'canal offset Davant  
R2 = 0  
L3 = CHNLENGTH(L4)  
L3 = 50  
R1 = 0  
L6 = 1  
Do While L6 < = L3  
  R5 = CHD(L6, L4)  
  R1 = R1 + R5  
  L6 = L6 + 1 ' <<< Step 1 or Step -1  
Loop  
R2 = R1/50  
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```

```
L4 = Cno("FL_press") 'canal offset Davant  
R2 = 0  
L3 = CHNLENGTH(L4)  
L3 = 50  
R1 = 0  
L6 = 1  
Do While L6 < = L3  
  R5 = CHD(L6, L4)  
  R1 = R1 + R5  
  L6 = L6 + 1 ' <<< Step 1 or Step -1  
Loop  
R2 = R1/50  
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```

```
L4 = Cno("FR_press") 'canal offset Davant  
R2 = 0  
L3 = CHNLENGTH(L4)  
L3 = 50  
R1 = 0  
L6 = 1  
Do While L6 < = L3  
  R5 = CHD(L6, L4)  
  R1 = R1 + R5  
  L6 = L6 + 1 ' <<< Step 1 or Step -1  
Loop  
R2 = R1/50  
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```

```
L4 = Cno("RL_press") 'canal offset Davant  
R2 = 0  
L3 = CHNLENGTH(L4)  
L3 = 50  
R1 = 0  
L6 = 1  
Do While L6 < = L3
```



```
R5 = CHD(L6, L4)
R1 = R1 + R5
L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/50
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```

```
L4 = Cno("RR_press") 'canal offset Davant
R2 = 0
L3 = CHNLENGTH(L4)
L3 = 50
R1 = 0
L6 = 1
Do While L6 <= L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/50
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```

```
L4 = Cno("Vhc_dec") 'canal offset Darrere
R2 = 0
L3 = CHNLENGTH(L4)
L2 = L3-50
R1 = 0
L6 = L2
Do While L6 <= L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/51
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```

```
L4 = Cno("Ped_strk") 'canal offset Darrere
R2 = 0
L3 = CHNLENGTH(L4)
L2 = L3-50
R1 = 0
L6 = L2
Do While L6 <= L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/51
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```

```
L4 = Cno("Yaw_rate") 'canal offset Darrere
R2 = 0
L3 = CHNLENGTH(L4)
```

```

L2 = L3-50
R1 = 0
L6 = L2
Do While L6 < = L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/51
Call FormulaCalc("CH(L4): = CH(L4)-R2")

Cn("Vhc_spd") = ("vx")
Cn("Heading") = ("yaw")
Cn("Yaw_rate") = ("yawR")
Cn("Timer_1") = ("time")
Call CHNSMOOTH("yawR", "yawR", 100, "maxNumber") '... Y,E,SMOOTHWIDTH,SMOOTHTYPE
Call CHNFILTCALC("time", "yaw", "yaw", "IIR", "Butterworth", "Low
pass", 8, 3, 0, 0, 1.2, 25, "Hamming", 1, 1) '...
X,Y,E,FILTSTRUC,FILTSTYLE,FILTTYPE,FILTDEGREE,FILTLIMIT,FILTLOWLIMIT,FILTUPPLIMIT,FILT
WAVE,FILTSAMPLES,FILTWNDFCT,FILTZEROPHASE,FILTCORRECTION
Call CHNFILTCALC("time", "yawR", "yawR", "IIR", "Butterworth", "Low
pass", 8, 3, 0, 0, 1.2, 25, "Hamming", 1, 1) '...
X,Y,E,FILTSTRUC,FILTSTYLE,FILTTYPE,FILTDEGREE,FILTLIMIT,FILTLOWLIMIT,FILTUPPLIMIT,FILT
WAVE,FILTSAMPLES,FILTWNDFCT,FILTZEROPHASE,FILTCORRECTION
Call CHNSMOOTH("vx", "vx", 8, "maxNumber") '... Y,E,SMOOTHWIDTH,SMOOTHTYPE
Call CHNSMOOTH("Vhc_dec", "Vhc_dec", 8, "maxNumber") '...
Y,E,SMOOTHWIDTH,SMOOTHTYPE

'-----
'          Variables
'-----

If B1 = true then
  Cn("Lat_vel") = ("vy")
end if

If B2 = true then
  Cn("Slip") = ("Slip REF")
  Call CHNSMOOTH("Slip REF", "Slip REF", 10, "maxNumber") '...
Y,E,SMOOTHWIDTH,SMOOTHTYPE
  Call CHNDIFFERENTIATE("time", "Slip REF", "X_Diff", "Y_Diff") '... X,Y,E,E
  Cn("Y_Diff") = ("slipR")
end if

If B3 = true then
  Call FormulaCalc("ch('yaw'):= ch('yaw')*-1")
end if

if B4 = true then
  Call FormulaCalc("ch('yawR'):= ch('yawR')*-1")
End if

if B5 = true then
  Call FormulaCalc("ch('Slip REF'):= ch('Slip REF')*-1")

```



```
end if

if B6=true then
  Call FormulaCalc("ch('Steering angle'):=ch('Steering angle')*-1")
end if

'Call FormulaCalc("ch('Slip REF'):=ch('Slip REF')*-1")
'Call FormulaCalc("ch('vy'):=ch('vy')*-1")

'*** Combined speed ***

if cno("vy")<>0 then
  Call FormulaCalc("ch('vxy'):=sqrt('vx'^2+'vy'^2)/3.6")
else
  Call FormulaCalc("ch('vxy'):= 'vx'/3.6")
end if

'*** Displacement ***

Call CHNINTEGRATE("time", "vxy", "displ_XY")

'*** Shift displ one sample and subtract from original to obtain displ/sample ***

Call FormulaCalc("ch('displ_XY_1'):=ch('displ_XY')")
Call DATAAREADEL(CNo("displ_XY_1"), 1, 1, CNo("displ_XY_1"))
Call FormulaCalc("ch('displ_XY_step'):= 'displ_XY_1'-'displ_XY'")

'***** Calculation of total angle of vehicle (if yaw and/or yawR channel exist) *****

If cno("yaw")<>0 or cno("yawR")<>0 Then

  '*** Calculation of yaw from yawR (if the existing yaw signal is problematic because of -180° to 180° jumps) ***

  If cno("yaw")<>0 and cno("yawR")<>0 Then
    If cch("yaw",1)<-170 and cch("yaw",2)>170 Then
      Call chndel("yaw")
      Call CHNINTEGRATE("time", "yawR", "yaw")
    End If
  End If

  '*** Calculation of yaw from yawR (if no yaw channel) ***

  If cno("yaw")=0 and cno("yawR")<>0 Then Call CHNINTEGRATE("time", "yawR", "yaw")

  '***** Closed track only - Compensation of yaw for drift *****

'R2=Abs(360/(CHD(CHNLENGTH("yaw"), "yaw")))-1
'Call FormulaCalc("ch('yaw'):= ((R2*'time'/chd(chnlength('time'),'time')) + 1) * 'yaw'")
```



```
'** Total angle **

if cno("Slip REF") < > 0 then Call FormulaCalc("ch('angle'):= 'yaw' + 'Slip REF'")
if cno("Slip REF")=0 then Call FormulaCalc("ch('angle'):= 'yaw'") 'Less accurate !!

End If

'***** Calculation of total angle through yawR + slipR from ay and vx (if no yawR and no yaw
channel) *****

If cno("yaw")=0 and cno("yawR")=0 Then
  Call FormulaCalc("ch('yawR + slipR'):= 180/pi*'ay'/'vx'/3.6)")
  Call CHNINTEGRATE("time", "yawR + slipR", "angle")
end if

'** Calculation of absolute displ/sample **

Call FormulaCalc("ch('pos_X_step'):= cos('angle'*pi/180)*ch('displ_XY_step'")
Call FormulaCalc("ch('pos_Y_step'):= sin('angle'*pi/180)*ch('displ_XY_step'")

'***** Automatic detection of sampling rate from time channel *****

R7 = 1/((Chd(2, cno("time")))-(Chd(1, cno("time"))))

Call FormulaCalc("ch('time_sample'):= ch('time')*R7")

'** Integrate to obtain absolute coordinates **

Call CHNINTEGRATE("time_sample", "pos_X_step", "pos_X")
Call CHNINTEGRATE("time_sample", "pos_Y_step", "pos_Y")

CHD(CHNLENGTH("pos_X") + 1, "pos_X") = CHD(CHNLENGTH("pos_X"), "pos_X") 'Equal channel
length
CHD(CHNLENGTH("pos_Y") + 1, "pos_Y") = CHD(CHNLENGTH("pos_Y"), "pos_Y") 'Equal channel
length

'***** Closed track only - Compensate absolute positions to close track *****

'R3 = (CHD(1, "pos_X"))-(CHD(CHNLENGTH("pos_X"), "pos_X"))
'Call FormulaCalc("ch('pos_X'):= 'pos_X' + 'time'/chd(chnlength('time'),'time')*R3")

'R3 = (CHD(1, "pos_Y"))-(CHD(CHNLENGTH("pos_Y"), "pos_Y"))
'Call FormulaCalc("ch('pos_Y'):= 'pos_Y' + 'time'/chd(chnlength('time'),'time')*R3")

'***** Delete temporary channels

Call CHNDEL("displ_XY_1")
Call CHNDEL("displ_XY_step")
Call CHNDEL("pos_X_step")
Call CHNDEL("pos_Y_step")
```



```
Call CHNDEL("time_sample")

***** Origin rotation
'R30 = chdx(900,CNo("angle"))

'Call Formulacalc ("Ch ('angle'):= (Ch('angle')-R30)")
LI = Find("ch('Ped_eff') > 2", 1)

'L3 = 50
R1 = LI 'row number of the track position channel to consider
R2 = 1 'X component of the reference vector
R3 = 0 'Y component of the reference vector
R4 = chd(R1,"pos_X") 'X component of the track vector
R5 = chd(R1,"pos_Y") 'Y component of the track vector
'R6 = acos(((R2*R4) + (R3*R5))/(sqrt(R2^2 + R3^2)*sqrt(R4^2 + R5^2))) 'calculation of the angle
between vectors track & reference
R6 = atan(R5/R4)
call formulacalc("ch('pos_Xc'):= (cos(R6)*ch(pos_X)) + (sin(R6)*ch(pos_Y))") 'pos_X correction
through origin rotation
call formulacalc("ch('pos_Yc'):= (-1*sin(R6)*ch(pos_X)) + (cos(R6)*ch(pos_Y))") 'pos_Y correction
through origin rotation
'cn(L3) = "pos_Xc"
'cn(L3 + 1) = "pos_Yc"

'-----
'   CALCULAR OFFSET PER POSICIONS.
'-----

R30 = chdx(LI,CNo("pos_Y"))

Call Formulacalc ("Ch ('pos_Y'):= (Ch('pos_Y')-R30)")

LI = Find("ch('Ped_eff') > 1", 1)
R30 = chdx(LI,CNo("pos_Yc"))

Call Formulacalc ("Ch ('pos_Yc'):= (Ch('pos_Yc')-R30)")

LID = Find("abs(Ch('vx')) < 1", 1)
LID = LID + 10

L1 = cno("pos_Y")
Call DATABLEDEL(str(L1),LID,chnlength("pos_Y") )
L1 = cno("pos_Yc")
Call DATABLEDEL(str(L1),LID,chnlength("pos_Yc") )
L1 = cno("pos_X")
Call DATABLEDEL(str(L1),LID,chnlength("pos_X") )
L1 = cno("pos_Xc")
Call DATABLEDEL(str(L1),LID,chnlength("pos_Xc") )

If abs(Cmax("Pos_Yc")) > abs(Cmin("Pos_Yc")) then
T8 = (round(Cmax("Pos_Yc"),1))
Else T8 = abs(round(Cmin("Pos_Yc"),1))
end if
```

```
CC("Pos_Yc") = T8  
End sub
```

```
'-----  
' DESGLOCE DEL PATH COMPLETO  
'-----
```

```
Sub Graf_SLS()
```

```
R29 = chdx(1,CNo("Distance"))  
Call Formulacalc ("Ch('Distance') = Ch('Distance')-R29")  
LI = Find("ch('Ped_eff') > 1", 1)  
R30 = chdx(LI,CNo("pos_Xc"))  
  
LID = Find("abs(Ch('vx')) < 1", 1)  
LID = LID + 10  
R15 = round(chdx(LI,CNo("time")), 1)  
R16 = round(chdx(LID,CNo("time")), 1)  
R17 = round(chdx(LI,CNo("pos_Xc")))   
R18 = round(chdx(Chnlength("pos_Xc")-1,CNo("pos_Xc")))
```

```
Call GRAPHObjOpen("2DAxis5")  
Call GRAPHObjOpen("2DXAxis2_1")  
D2AXISXDIVMODE = "linear"  
D2AXISXSCALETYPE = "manual"  
D2AXISXBEGIN = R15-1  
D2AXISXEND = R16 + 1  
D2AXISXORIGIN = R15-1  
D2AXISXTICKDIST = "calculated from tick space"  
D2AXISXTICK = 1  
D2AXISXTICKCHN = "time"  
D2AXISXMINITICK = 0  
D2AXISXTICKTYPE = "bottom"  
D2AXISXTICKCHNN = ""  
D2AXISXTICKCHNF = ""  
D2AXISXTICKCHNC = ""  
Call GRAPHObjClose("2DXAxis2_1")  
Call GRAPHObjClose("2DAxis5")
```

```
Call GRAPHObjOpen("2DAxis6")  
Call GRAPHObjOpen("2DXAxis3_1")  
D2AXISXDIVMODE = "linear"  
D2AXISXSCALETYPE = "manual"  
D2AXISXBEGIN = R15-1  
D2AXISXEND = R16 + 1  
D2AXISXORIGIN = R15-1  
D2AXISXTICKDIST = "calculated from tick space"  
D2AXISXTICK = 1  
D2AXISXTICKCHN = "time"  
D2AXISXMINITICK = 0  
D2AXISXTICKTYPE = "bottom"  
D2AXISXTICKCHNN = ""  
D2AXISXTICKCHNF = ""  
D2AXISXTICKCHNC = ""  
Call GRAPHObjClose("2DXAxis3_1")  
Call GRAPHObjClose("2DAxis6")
```



```
Call GRAPHObjOpen("2DAxis2")
Call GRAPHObjOpen("2DXAxis4_1")
  D2AXISXDIVMODE = "linear"
  D2AXISXSCALETYPE = "manual"
  D2AXISXBEGIN = R15-1
  D2AXISXEND = R16 + 1
  D2AXISXORIGIN = R15-1
  D2AXISXTICKDIST = "calculated from tick space"
  D2AXISXTICK = 1
  D2AXISXTICKCHN = "time"
  D2AXISXMINITICK = 0
  D2AXISXTICKTYPE = "bottom"
  D2AXISXTICKCHNN = ""
  D2AXISXTICKCHNF = ""
  D2AXISXTICKCHNC = ""
Call GRAPHObjClose("2DXAxis4_1")
Call GRAPHObjClose("2DAxis2")
```

```
Call GRAPHObjOpen("2DAxis1")
Call GRAPHObjOpen("2DXAxis1_1")
  D2AXISXDIVMODE = "linear"
  D2AXISXSCALETYPE = "manual"
  D2AXISXBEGIN = R17-30
  D2AXISXEND = R18 + 30
  D2AXISXORIGIN = R17-30
  D2AXISXTICKDIST = "calculated from tick space"
  D2AXISXTICK = 25
  D2AXISXTICKCHN = "time"
  D2AXISXMINITICK = 0
  D2AXISXTICKTYPE = "bottom"
  D2AXISXTICKCHNN = ""
  D2AXISXTICKCHNF = ""
  D2AXISXTICKCHNC = ""
Call GRAPHObjClose("2DXAxis1_1")
Call GRAPHObjClose("2DAxis1")
```

```
Call GRAPHObjOpen("2DAxis5")
Call GRAPHObjOpen("2DObj2_Curve2")
  D2CCHNX = "time"
  D2CCHNY = "vx"
  D2CCHNY1 = 0
  D2CCONSTX = NOVALUE
  D2CCONSTY = NOVALUE
  D2CAXISPAIRNO = 1
  D2CCURVETYPE = "Line"
  D2CURVECOLOR = "dark red"
  D2CURVECOLORRGB = 46186688
  D2CURVESPECCOLOR = "red"
  D2CURVESPECCORGB = 33554687
  D2LEGDRAW = 1
  D2LEGPDRAW = 0
  D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve2")
```

Call GRAPHObjOpen("2DObj2\_Curve11")

D2CCHNX = "time"  
D2CCHNY = "Ped\_eff"  
D2CCHNY1 = 0  
D2CCONSTX = NOVALUE  
D2CCONSTY = NOVALUE  
D2CAXISPAIRNO = 1  
D2CCURVETYPE = "Line"  
D2CURVECOLOR = "other colors"  
D2CURVECOLORRGB = 32768  
D2CURVESPECCOLOR = "red"  
D2CURVESPECCORGB = 33554687  
D2LEGDRAW = 1  
D2LEGPDRAW = 0  
D2USECOMMONXCHN = 0

Call GRAPHObjClose("2DObj2\_Curve11")

Call GRAPHObjOpen("2DObj2\_Curve6")

D2CCHNX = "time"  
D2CCHNY = "MC\_press"  
D2CCHNY1 = 0  
D2CCONSTX = NOVALUE  
D2CCONSTY = NOVALUE  
D2CAXISPAIRNO = 1  
D2CCURVETYPE = "Line"  
D2CURVECOLOR = "black"  
D2CURVECOLORRGB = 33554432  
D2CURVESPECCOLOR = "red"  
D2CURVESPECCORGB = 33554687  
D2LEGDRAW = 1  
D2LEGPDRAW = 0  
D2USECOMMONXCHN = 0

Call GRAPHObjClose("2DObj2\_Curve6")

Call GRAPHObjOpen("2DObj2\_Curve7")

D2CCHNX = "time"  
D2CCHNY = "FL\_press"  
D2CCHNY1 = 0  
D2CCONSTX = NOVALUE  
D2CCONSTY = NOVALUE  
D2CAXISPAIRNO = 1  
D2CCURVETYPE = "Line"  
D2CURVECOLOR = "red"  
D2CURVECOLORRGB = 33554687  
D2CURVESPECCOLOR = "red"  
D2CURVESPECCORGB = 33554687  
D2LEGDRAW = 1  
D2LEGPDRAW = 0  
D2USECOMMONXCHN = 0

Call GRAPHObjClose("2DObj2\_Curve7")

Call GRAPHObjOpen("2DObj2\_Curve8")

D2CCHNX = "time"  
D2CCHNY = "FR\_press"  
D2CCHNY1 = 0  
D2CCONSTX = NOVALUE  
D2CCONSTY = NOVALUE  
D2CAXISPAIRNO = 1  
D2CCURVETYPE = "Line"

```
D2CURVECOLOR      = "green"
D2CURVECOLORRGB   = 33619712
D2CURVESPECCOLOR  = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW         = 1
D2LEGPDRAW        = 0
D2USECOMMONXCHN  = 0
Call GRAPHObjClose("2DObj2_Curve8")
Call GRAPHObjOpen("2DObj2_Curve9")
D2CCHNX           = "time"
D2CCHNY           = "RL_press"
D2CCHNY1          = 0
D2CCONSTX         = NOVALUE
D2CCONSTY         = NOVALUE
D2CAXISPAIRNO     = 1
D2CCURVETYPE      = "Line"
D2CURVECOLOR      = "blue"
D2CURVECOLORRGB   = 50266112
D2CURVESPECCOLOR  = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW         = 1
D2LEGPDRAW        = 0
D2USECOMMONXCHN  = 0
Call GRAPHObjClose("2DObj2_Curve9")
Call GRAPHObjOpen("2DObj2_Curve10")
D2CCHNX           = "time"
D2CCHNY           = "RR_press"
D2CCHNY1          = 0
D2CCONSTX         = NOVALUE
D2CCONSTY         = NOVALUE
D2CAXISPAIRNO     = 1
D2CCURVETYPE      = "Line"
D2CURVECOLOR      = "violet"
D2CURVECOLORRGB   = 50266367
D2CURVESPECCOLOR  = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW         = 1
D2LEGPDRAW        = 0
D2USECOMMONXCHN  = 0
Call GRAPHObjClose("2DObj2_Curve10")
Call GRAPHObjClose("2DAxis5")

Call GRAPHObjOpen("2DAxis6")
Call GRAPHObjOpen("2DObj3_Curve2")
D2CCHNX           = "time"
D2CCHNY           = "pos_Yc"
D2CCHNY1          = 0
D2CCONSTX         = NOVALUE
D2CCONSTY         = NOVALUE
D2CAXISPAIRNO     = 1
D2CCURVETYPE      = "Line"
D2CURVECOLOR      = "black"
D2CURVECOLORRGB   = 33554432
D2CURVESPECCOLOR  = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW         = 1
```

```
D2LEGPDRAW      =0
D2USECOMMONXCHN =0
Call GRAPHObjClose("2DObj3_Curve2")
Call GRAPHObjOpen("2DObj3_Curve1")
D2CCHNX         ="time"
D2CCHNY         ="yawR"
D2CCHNY1        =0
D2CCONSTX       =NOVALUE
D2CCONSTY       =NOVALUE
D2CAXISPAIRNO   =1
D2CCURVETYPE    ="Line"
D2CURVECOLOR    ="red"
D2CURVECOLORRGB =33554687
D2CURVESPECCOLOR ="red"
D2CURVESPECCORGB =33554687
D2LEGDRAW       =1
D2LEGPDRAW      =0
D2USECOMMONXCHN =0
Call GRAPHObjClose("2DObj3_Curve1")
Call GRAPHObjClose("2DAxis6")
```

```
Call GRAPHObjOpen("2DAxis2")
Call GRAPHObjOpen("2DObj4_Curve2")
D2CCHNX         ="time"
D2CCHNY         ="Vhc_dec"
D2CCHNY1        =0
D2CCONSTX       =NOVALUE
D2CCONSTY       =NOVALUE
D2CAXISPAIRNO   =1
D2CCURVETYPE    ="Line"
D2CURVECOLOR    ="black"
D2CURVECOLORRGB =33554432
D2CURVESPECCOLOR ="red"
D2CURVESPECCORGB =33554687
D2LEGDRAW       =1
D2LEGPDRAW      =0
D2USECOMMONXCHN =0
Call GRAPHObjClose("2DObj4_Curve2")
Call GRAPHObjClose("2DAxis2")
```

```
Call GRAPHObjOpen("2DAxis1")
Call GRAPHObjOpen("2DObj1_Curve1")
D2CCHNX         ="pos_Xc"
D2CCHNY         ="pos_Yc"
D2CCHNY1        =0
D2CCONSTX       =NOVALUE
D2CCONSTY       =NOVALUE
D2CAXISPAIRNO   =1
D2CCURVETYPE    ="Line"
D2CURVECOLOR    ="red"
D2CURVECOLORRGB =33554687
```



```
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW      = 0
D2LEGPDRAW     = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve1")
Call GRAPHObjOpen("2DObj1_Curve2")
D2CCHNX        = "time"
D2CCHNY        = "Vhc_dec"
D2CCHNY1       = "time"
D2CCONSTX      = R30
D2CCONSTY      = NOVALUE
D2CAXISPAIRNO  = 1
D2CCURVETYPE   = "Constant"
D2CURVECOLOR   = "blue"
D2CURVECOLORRGB = 33554687
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW      = 0
D2LEGPDRAW     = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve2")
Call GRAPHObjClose("2DAxis1")

call Picupdate ()
End sub

'-----
'
'                               Mu spli Fixed
'
'-----

Sub MF()

Call FILECLOSEALL() 'parece innecesario, pero no lo quites INTRIGADO? !!!!!
AutoDrvUser = "D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\"
Call FileNameGet("ANY", "FileRead", "*.DAT", "*.DAT", "Seleccionados", "Yes", "SELECCIONAR FICHEROS")

If (DlgState = "IDCancel") Then
    Call AutoQuit("Que fas !!! l'has cagat Felip (no s'ha fet res)")
End If

B1 = false
B2 = false
SudDefLoad("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2. Macro\Deviation2.sud")
SudDlgShow("Main")
If (DlgState = "IDCancel") Then
    Call AutoQuit("Que fas !!! l'has cagat Felip (no s'ha fet res)")
End If
Call PICLOAD("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2. Macro\Temporals OL.LPD")

Call FILEOPEN("Seleccionados", 2)
i = 1 ' Linea que estamos leyendo del fichero "Seleccionados", que contiene los
```

'nombres de los ficheros a transformar

FicheroActivo = FR("Seleccionados", i)

Call DATADELALL(1) '... HEADERDEL  
Do While FicheroActivo < > "EOF"

Call DesglocePath(FicheroActivo, NombreFicheroActivo, PathFicheroActivo, Extension)  
Call DATALOAD(FicheroActivo)  
If cno("Vhc\_spd5") < > 0 then  
cn("Vhc\_spd5") = ("Vhc\_spd")  
end if

if B1 = true then  
Call FormulaCalc("ch('Yaw\_rate') := ch('Yaw\_rate') \* -1")  
End if

if B2 = true then  
Call FormulaCalc("ch('Steering angle') := ch('Steering angle') \* -1")  
end if

Call CHNSMOOTH("Yaw\_rate", "Yaw\_rate", 100, "maxNumber") '...  
Y,E,SMOOTHWIDTH,SMOOTHTYPE  
Call CHNSMOOTH("Vhc\_dec", "Vhc\_dec", 8, "maxNumber") '...  
Y,E,SMOOTHWIDTH,SMOOTHTYPE  
Call CHNSMOOTH("Vhc\_spd", "Vhc\_spd", 5, "maxNumber") '...  
Y,E,SMOOTHWIDTH,SMOOTHTYPE  
Call CHNSMOOTH("Steering angle", "Steering angle", 8, "maxNumber") '...  
Y,E,SMOOTHWIDTH,SMOOTHTYPE

L4 = CNo ("Ped\_eff")  
R2 = 0  
L3 = CHNLENGTH(L4)  
L3 = 50  
R1 = 0  
L6 = 1  
Do While L6 < = L3  
R5 = CHD(L6, L4)  
R1 = R1 + R5  
L6 = L6 + 1 ' <<< Step 1 or Step -1  
Loop  
R2 = R1/50  
Call FormulaCalc("CH(L4) := CH(L4)-R2")

L4 = CNo ("FL\_press")  
R2 = 0  
L3 = CHNLENGTH(L4)  
L3 = 50  
R1 = 0  
L6 = 1  
Do While L6 < = L3

```

R5 = CHD(L6, L4)
R1 = R1 + R5
L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/50
Call FormulaCalc("CH(L4): = CH(L4)-R2")

```

```

L4 = CNo("FR_press")
R2 = 0
L3 = CHNLENGTH(L4)
L3 = 50
R1 = 0
L6 = 1
Do While L6 <= L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/50
Call FormulaCalc("CH(L4): = CH(L4)-R2")

```

```

L4 = CNo ("RL_press")
R2 = 0
L3 = CHNLENGTH(L4)
L3 = 50
R1 = 0
L6 = 1
Do While L6 <= L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/50
Call FormulaCalc("CH(L4): = CH(L4)-R2")

```

```

L4 = CNo("RR_press")
R2 = 0
L3 = CHNLENGTH(L4)
L3 = 50
R1 = 0
L6 = 1
Do While L6 <= L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/50
Call FormulaCalc("CH(L4): = CH(L4)-R2")

```

```

Linealni = Find("(Ch('Ped_eff') > 1)", 1)
R1 = round(chdx(Linealni, CNo("Timer_1")))
Linealni2 = Linealni - 250

```

```

Yawrate1s = chdx(Linealni2,CNo("Yaw_rate"))
L20 = CNo("Yaw_rate")
R21 = Yawrate1s
Call FormulaCalc("ch(L20) := Ch(L20)- R21")

SWA = chdx(Linealni2,CNo("Steering angle"))
L20 = CNo("Steering angle")
R21 = SWA
Call FormulaCalc("ch(L20) := Ch(L20)- R21")

Linealni2 = Linealni + 500
Yawrate1s = chdx(Linealni2,CNo("Yaw_rate"))

Call CHNALLOC("Yaw1s",1,1)
CL("Yaw1s") = 1          '... GHDCNNNAME,GHDCNNLENGTH,CHNNO
chdx(1,CNo("Yaw1s")) = Yawrate1s
T4 = Round(Yawrate1s, 1)
CC ("Yaw1s") = T4

```

```

LF = Linealni + 500
R2 = LF/500
FLpress = chdx(LF,CNo("FL_press"))
T2 = Round(FLpress, 1)
CC ("FL_press") = T2
RLpress = chdx(LF,CNo("RL_press"))
T2 = Round(RLpress, 1)
CC ("RL_press") = T2

```

call Graf\_OL

```

NewFolder2 = PathFicheroActivo + "Graf_Fixed\"
Call CreateFolder(NewFolder2)
GraphDrvUser = NewFolder2
T3 = NombreFicheroActivo
'Call PICSAVEAS(T3)
Call Picupdate()
  EXBITSPERPIXELX
= "#ExType:@/@/@ExBitsPerPixJPEG/@ExBitsPerPixTIF/@ExBitsPerPixBMP/@ExBitsPerPixRLE/@E
xBitsPerPixPCX/@ExBitsPerPixPSD/@ExBitsPerPixPNG/@ExBitsPerPixTGA/@ExBitsPerPixEPS/@Ex
BitsPerPixRAS/@ExBitsPerPixWPG/@ExBitsPerPixPCT"
  EXQUALITY      = 25
  EXCOMPRESSTYPEX
= "#ExType:@/@/@ExCompTypJPEG/@ExCompTypTIF/@ExCompTypBMP/@ExCompTypRLE/@E
xCompTypPCX/@ExCompTypPSD/@ExCompTypPNG/@ExCompTypTGA/@ExCompTypEPS/@ExC
ompTypRAS/@ExCompTypWPG/@ExCompTypPCT"
  EXPROGRESSIVE  = 0
  Call PICEXPORT(T3,"WMF",1,768,1024) '...
EXFILENAME,EXTYPE,EXUSERATIO,EXHEIGHT,EXWIDTH,EXBITSPERPIXELX,EXQUALITY,EXCO
MPRESSTYPEX,EXPROGRESSIVE

'Call DATASAVE(FicheroActivo)      '... DATAFILE
i = i + 1
FicheroActivo = FR("Seleccionados", i)

```



```
Loop
L1 = 4
End sub
'-----
' Graphics OL
'-----
Sub Graf_OL()
Call GRAPHObjOpen("2DAxis1")
Call GRAPHObjOpen("2DXAxis1_1")
  D2AXISXDIVMODE = "linear"
  D2AXISXSCALETYPE = "manual"
  D2AXISXBEGIN = R1-0.5
  D2AXISXEND = R1 + 1.5
  D2AXISXORIGIN = R1-0.5
  D2AXISXTICKDIST = "calculated from tick space"
  D2AXISXTICK = 0.5
  D2AXISXTICKCHN = "Timer_1"
  D2AXISXMINITICK = 4
  D2AXISXTICKTYPE = "bottom"
  D2AXISXTICKCHNN = ""
  D2AXISXTICKCHNF = ""
  D2AXISXTICKCHNC = ""
Call GRAPHObjClose("2DXAxis1_1")
Call GRAPHObjClose("2DAxis1")

Call GRAPHObjOpen("2DAxis2")
Call GRAPHObjOpen("2DXAxis2_1")
  D2AXISXDIVMODE = "linear"
  D2AXISXSCALETYPE = "manual"
  D2AXISXBEGIN = R1-0.5
  D2AXISXEND = R1 + 1.5
  D2AXISXORIGIN = R1-0.5
  D2AXISXTICKDIST = "calculated from tick space"
  D2AXISXTICK = 0.5
  D2AXISXTICKCHN = "Timer_1"
  D2AXISXMINITICK = 4
  D2AXISXTICKTYPE = "bottom"
  D2AXISXTICKCHNN = ""
  D2AXISXTICKCHNF = ""
  D2AXISXTICKCHNC = ""
Call GRAPHObjClose("2DXAxis2_1")
Call GRAPHObjClose("2DAxis2")

Call GRAPHObjOpen("2DAxis1")
Call GRAPHObjOpen("2DObj1_Curve3")
  D2CCHNX = "Timer_1"
  D2CCHNY = "Vhc_spd"
  D2CCHNY1 = 0
  D2CCONSTX = NOVALUE
  D2CCONSTY = NOVALUE
  D2CAXISPAIRNO = 1
  D2CCURVETYPE = "Line"
  D2CURVECOLOR = "black"
```

```
D2CURVECOLORRGB = 50266367
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW = 1
D2LEGPDRAW = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve3")
Call GRAPHObjOpen("2DObj1_Curve7")
D2CCHNX = "Timer_1"
D2CCHNY = "FL_press"
D2CCHNY1 = 0
D2CCONSTX = NOVALUE
D2CCONSTY = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "red"
D2CURVECOLORRGB = 50266112
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW = 1
D2LEGPDRAW = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve7")
Call GRAPHObjOpen("2DObj1_Curve2")
D2CCHNX = "Timer_1"
D2CCHNY = "FR_press"
D2CCHNY1 = 0
D2CCONSTX = NOVALUE
D2CCONSTY = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "green"
D2CURVECOLORRGB = 33587200
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW = 1
D2LEGPDRAW = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve2")
Call GRAPHObjOpen("2DObj1_Curve6")
D2CCHNX = "Timer_1"
D2CCHNY = "RL_press"
D2CCHNY1 = 0
D2CCONSTX = NOVALUE
D2CCONSTY = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "blue"
D2CURVECOLORRGB = 33554560
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW = 1
D2LEGPDRAW = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve6")
Call GRAPHObjOpen("2DObj1_Curve1")
```

```
D2CCHNX      = "Timer_1"
D2CCHNY      = "RR_press"
D2CCHNY1     = 0
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "violet"
D2CURVECOLORRGB = 33554432
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve1")
Call GRAPHObjOpen("2DObj1_Curve8")
D2CCHNX      = "Timer_1"
D2CCHNY      = "Vhc_spd"
D2CCHNY1     = "Timer_1"
D2CCONSTX    = R2
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Constant"
D2CURVECOLOR = "red"
D2CURVECOLORRGB = 33619967
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve8")
Call GRAPHObjClose("2DAxis1")

Call GRAPHObjOpen("2DAxis2")
Call GRAPHObjOpen("2DObj2_Curve6")
D2CCHNX      = "Timer_1"
D2CCHNY      = "Yaw_rate"
D2CCHNY1     = 0
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "black"
D2CURVECOLORRGB = 33554560
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve6")
Call GRAPHObjOpen("2DObj2_Curve7")
D2CCHNX      = "Timer_1"
D2CCHNY      = "Steering angle"
D2CCHNY1     = 0
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
```



```
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "red"
D2CURVECOLORRGB = 4227072
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW = 1
D2LEGPDRAW = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve7")
Call GRAPHObjOpen("2DObj2_Curve8")
D2CCHNX = 0
D2CCHNY = 0
D2CCHNY1 = 0
D2CCONSTX = R2
D2CCONSTY = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Constant"
D2CURVECOLOR = "red"
D2CURVECOLORRGB = 33554687
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW = 1
D2LEGPDRAW = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve8")
Call GRAPHObjClose("2DAxis2")
End sub
```

```
'-----
'
'                               Mu-split & track mapping
'
'-----
```

```
Sub MTM()
Call FILECLOSEALL() 'parece innecesario, pero no lo quites INTRIGADO? !!!!!
AutoDrvUser = "D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\"
Call FileNameGet("ANY", "FileRead", "*.DAT", "*.DAT", "Seleccionados", "Yes", "SELECCIONAR
FICHEROS MUSPLIT")
```

```
If (DlgState = "IDCancel") Then
    Call AutoQuit("NO FUNCIONA!!!!!!!!")
End If
```

```
B1 = false
B2 = false
B3 = true
B4 = true
B5 = false
B6 = false
```



```
SudDefLoad("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2. Macro\Deviation.sud")
SudDlgShow("Main")
Call Picload ("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2. Macro\mu-split &
mapping_stroke.LPD")

If (DlgState = "IDCancel") Then
    Call AutoQuit("angelo cabron!!!!")
End If

Call FILEOPEN("Seleccionados", 2)
i = 1 ' Linea que estamos leyendo del fichero "Seleccionados", que contiene los
      'nombres de los ficheros a transformar

FicheroActivo = FR("Seleccionados", i)

Call DATADELALL(1)          '... HEADERDEL
Do While FicheroActivo < > "EOF"

    Call DesglocePath(FicheroActivo, NombreFicheroActivo, PathFicheroActivo, Extension)
    Call DATALOAD(FicheroActivo)

Call Mu_split_calc_off_tm

CC("time") = NombreFicheroActivo

Call Graf_musplit_track

NewFolder2 = PathFicheroActivo + "Mu-split & Track mapping\"
Call CreateFolder(NewFolder2)
GraphDrvUser = NewFolder2
T3 = NombreFicheroActivo
'Call PICSAVEAS(T3)
Call Picupdate()
EXBITS PERPIXELX
= "#ExType:@/@/@ExBitsPerPixJPEG/@ExBitsPerPixTIF/@ExBitsPerPixBMP/@ExBitsPerPixRLE/@E
xBitsPerPixPCX/@ExBitsPerPixPSD/@ExBitsPerPixPNG/@ExBitsPerPixTGA/@ExBitsPerPixEPS/@Ex
BitsPerPixRAS/@ExBitsPerPixWPG/@ExBitsPerPixPCT"
EXQUALITY = 75
EXCOMPRESSTYPEX
= "#ExType:@/@/@ExCompTypJPEG/@ExCompTypTIF/@ExCompTypBMP/@ExCompTypRLE/@E
xCompTypPCX/@ExCompTypPSD/@ExCompTypPNG/@ExCompTypTGA/@ExCompTypEPS/@ExC
ompTypRAS/@ExCompTypWPG/@ExCompTypPCT"
EXPROGRESSIVE = 0
Call PICEXPORT(T3,"WMF",1,768,1024) '...
EXFILENAME,EXTYPE,EXUSERATIO,EXHEIGHT,EXWIDTH,EXBITS PERPIXELX,EXQUALITY,EXCO
MPRESSTYPEX,EXPROGRESSIVE

'Call DATASAVE(FicheroActivo)          '... DATAFILE
i = i + 1
FicheroActivo = FR("Seleccionados", i)
```



Loop  
end sub

```
'-----  
' Calculs, offset & track mapping (per mu split)  
'-----  
Sub Mu_split_calc_off_tm()  
  
        If cno("Vhc_spd5") <> 0 then  
            cn("Vhc_spd5") = ("Vhc_spd")  
            end if  
    If Cmax("Vhc_dec") = < 5 then  
        Call FormulaCalc("Ch ('Vhc_dec') := Ch ('Vhc_dec')*9.81")  
    End if
```

```
L4 = Cno("Heading") 'canal offset Davant  
R2 = 0  
L3 = CHNLENGTH(L4)  
L3 = 50  
R1 = 0  
L6 = 1  
Do While L6 <= L3  
    R5 = CHD(L6, L4)  
    R1 = R1 + R5  
    L6 = L6 + 1 ' <<< Step 1 or Step -1  
Loop  
R2 = R1/50  
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```

```
L4 = Cno("Ped_eff") 'canal offset Davant  
R2 = 0  
L3 = CHNLENGTH(L4)  
L3 = 50  
R1 = 0  
L6 = 1  
Do While L6 <= L3  
    R5 = CHD(L6, L4)  
    R1 = R1 + R5  
    L6 = L6 + 1 ' <<< Step 1 or Step -1  
Loop  
R2 = R1/51  
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```

```
L4 = Cno("MC_press") 'canal offset Davant  
R2 = 0  
L3 = CHNLENGTH(L4)  
L3 = 50  
R1 = 0  
L6 = 1
```



```
Do While L6 < = L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/51
Call FormulaCalc("CH(L4): = CH(L4)-R2")

L4 = Cno("FL_press") 'canal offset Davant
R2 = 0
L3 = CHNLENGTH(L4)
L3 = 50
R1 = 0
L6 = 1
Do While L6 < = L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/51
Call FormulaCalc("CH(L4): = CH(L4)-R2")

L4 = Cno("FR_press") 'canal offset Davant
R2 = 0
L3 = CHNLENGTH(L4)
L3 = 50
R1 = 0
L6 = 1
Do While L6 < = L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/51
Call FormulaCalc("CH(L4): = CH(L4)-R2")

L4 = Cno("RL_press") 'canal offset Davant
R2 = 0
L3 = CHNLENGTH(L4)
L3 = 50
R1 = 0
L6 = 1
Do While L6 < = L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/51
Call FormulaCalc("CH(L4): = CH(L4)-R2")

L4 = Cno("RR_press") 'canal offset Davant
R2 = 0
L3 = CHNLENGTH(L4)
L3 = 50
```

```
R1 = 0
L6 = 1
Do While L6 <= L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/51
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```

```
L4 = Cno("Steering angle") 'canal offset Davant
R2 = 0
L3 = CHNLENGTH(L4)
L3 = 50
R1 = 0
L6 = 1
Do While L6 <= L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/51
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```

```
L4 = Cno("Vhc_dec") 'canal offset Darrere
R2 = 0
L3 = CHNLENGTH(L4)
L2 = L3-50
R1 = 0
L6 = L2
Do While L6 <= L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/51
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```

```
L4 = Cno("Yaw_rate") 'canal offset Darrere
R2 = 0
L3 = CHNLENGTH(L4)
L2 = L3-50
R1 = 0
L6 = L2
Do While L6 <= L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/51
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```



```

L4 = Cno("Lat_vel") 'canal offset Darrere
R2 = 0
L3 = CHNLENGTH(L4)
L2 = L3-50
R1 = 0
L6 = L2
Do While L6 <= L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/51
Call FormulaCalc("CH(L4): = CH(L4)-R2")

```

```

L4 = Cno("Slip") 'canal offset Davant
R2 = 0
L3 = CHNLENGTH(L4)
L3 = 190
R1 = 0
L6 = 1
Do While L6 <= L3
  R5 = CHD(L6, L4)
  R1 = R1 + R5
  L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/191
Call FormulaCalc("CH(L4): = CH(L4)-R2")

```

```

Cn("Vhc_spd") = ("vx")
Cn("Heading") = ("yaw")
Cn("Yaw_rate") = ("yawR")
Cn("Timer_1") = ("time")
Call CHNSMOOTH("yawR", "yawR", 100, "maxNumber") '... Y,E,SMOOTHWIDTH,SMOOTHTYPE
Call CHNFILTCALC("time", "yaw", "yaw", "IIR", "Butterworth", "Low
pass", 8, 3, 0, 0, 1.2, 25, "Hamming", 1, 1) '...
X,Y,E,FILTSTRUC,FILTSTYLE,FILTTYPE,FILTDEGREE,FILTLIMIT,FILTLOWLIMIT,FILTUPPLIMIT,FILT
WAVE,FILTSAMPLES,FILTWNDFCT,FILTZEROPHASE,FILTCORRECTION
Call CHNFILTCALC("time", "yawR", "yawR", "IIR", "Butterworth", "Low
pass", 8, 3, 0, 0, 1.2, 25, "Hamming", 1, 1) '...
X,Y,E,FILTSTRUC,FILTSTYLE,FILTTYPE,FILTDEGREE,FILTLIMIT,FILTLOWLIMIT,FILTUPPLIMIT,FILT
WAVE,FILTSAMPLES,FILTWNDFCT,FILTZEROPHASE,FILTCORRECTION
Call CHNSMOOTH("vx", "vx", 8, "maxNumber") '... Y,E,SMOOTHWIDTH,SMOOTHTYPE
Call CHNSMOOTH("Vhc_dec", "Vhc_dec", 8, "maxNumber") '...
Y,E,SMOOTHWIDTH,SMOOTHTYPE
  Call FormulaCalc("ch('yawR') := ch('yawR')*-1")

```

```

'-----
'          Variables
'-----

```

```

If B1 = true then
  Cn("Lat_vel") = ("vy")
end if

```

```
If B2 = true then
  Cn("Slip") = ("Slip REF")
  Call CHNSMOOTH("Slip REF", "Slip REF", 10, "maxNumber") '...
Y,E,SMOOTHWIDTH,SMOOTHTYPE
  Call CHNDIFFERENTIATE("time", "Slip REF", "X_Diff", "Y_Diff") '... X,Y,E,E
  Cn("Y_Diff") = ("slipR")
end if

If B3 = true then
  Call FormulaCalc("ch('yaw'):=ch('yaw')*-1")
end if

if B4 = true then
  Call FormulaCalc("ch('yawR'):=ch('yawR')*-1")
End if

if B5 = true then
  Call FormulaCalc("ch('Slip REF'):=ch('Slip REF')*-1")
  Call FormulaCalc("ch('slipR'):=ch('slipR')*-1")
end if

if B6 = true then
  Call FormulaCalc("ch('Steering angle'):=ch('Steering angle')*-1")
end if

' ** Combined speed **

if cno("vy") < > 0 then
  Call FormulaCalc("ch('vxy'):=sqrt('vx'^2 + 'vy'^2)/3.6")
else
  Call FormulaCalc("ch('vxy'):= 'vx'/3.6")
end if

' ** Displacement **

Call CHNINTEGRATE("time", "vxy", "displ_XY")

' ** Shift displ one sample and substract from original to obtain displ/sample **

Call FormulaCalc("ch('displ_XY_1'):=ch('displ_XY')")
Call DATAAREADEL(CNo("displ_XY_1"), 1, 1, CNo("displ_XY_1"))
Call FormulaCalc("ch('displ_XY_step'):= 'displ_XY_1'-'displ_XY'")

' ***** Calculation of total angle of vehicle (if yaw and/or yawR channel exist) *****

If cno("yaw") < > 0 or cno("yawR") < > 0 Then

  ' ** Calculation of yaw from yawR (if the existing yaw signal is problematic because of -180° to 180° jumps) **

  If cno("yaw") < > 0 and cno("yawR") < > 0 Then
    If cch("yaw",1) < -170 and cch("yaw",2) > 170 Then
```



```
Call chndel("yaw")
Call CHNINTEGRATE("time", "yawR", "yaw")
End If
End If

'*** Calculation of yaw from yawR (if no yaw channel) **

If cno("yaw")=0 and cno("yawR")<>0 Then Call CHNINTEGRATE("time", "yawR", "yaw")

'***** Closed track only - Compensation of yaw for drift *****

'R2 = Abs(360/(CHD(CHNLENGTH("yaw"), "yaw")))-1
'Call FormulaCalc("ch('yaw'):= ((R2*'time'/chd(chnlength('time'),'time')) + 1) * 'yaw'")

'*** Total angle **

if cno("Slip REF")<>0 then Call FormulaCalc("ch('angle'):= 'yaw' + 'Slip REF'")
if cno("Slip REF")=0 then Call FormulaCalc("ch('angle'):= 'yaw'") 'Less accurate !!

End If

'***** Calculation of total angle through yawR + slipR from ay and vx (if no yawR and no yaw
channel) *****

If cno("yaw")=0 and cno("yawR")=0 Then
Call FormulaCalc("ch('yawR + slipR'):= 180/pi*'ay'/(('vx'/3.6)")
Call CHNINTEGRATE("time", "yawR + slipR", "angle")
end if

'*** Calculation of absolute displ/sample **

Call FormulaCalc("ch('pos_X_step'):= cos('angle'*pi/180)*ch('displ_XY_step'")
Call FormulaCalc("ch('pos_Y_step'):= sin('angle'*pi/180)*ch('displ_XY_step'")

'***** Automatic detection of sampling rate from time channel *****

R7 = 1/((Chd(2, cno("time")))-(Chd(1, cno("time"))))

Call FormulaCalc("ch('time_sample'):= ch('time')*R7")

'*** Integrate to obtain absolute coordinates **

Call CHNINTEGRATE("time_sample", "pos_X_step", "pos_X")
Call CHNINTEGRATE("time_sample", "pos_Y_step", "pos_Y")

CHD(CHNLENGTH("pos_X") + 1, "pos_X") = CHD(CHNLENGTH("pos_X"), "pos_X") 'Equal channel
length
CHD(CHNLENGTH("pos_Y") + 1, "pos_Y") = CHD(CHNLENGTH("pos_Y"), "pos_Y") 'Equal channel
length

'***** Closed track only - Compensate absolute positions to close track *****
```



```
'R3 = (CHD(1, "pos_X"))-(CHD(CHNLENGTH("pos_X"), "pos_X"))
'Call FormulaCalc("ch('pos_X'):= 'pos_X' + 'time'/chd(chnlength('time'),'time')*R3")

'R3 = (CHD(1, "pos_Y"))-(CHD(CHNLENGTH("pos_Y"), "pos_Y"))
'Call FormulaCalc("ch('pos_Y'):= 'pos_Y' + 'time'/chd(chnlength('time'),'time')*R3")

'***** Delete temporary channels

Call CHNDEL("displ_XY_1")
Call CHNDEL("displ_XY_step")
Call CHNDEL("pos_X_step")
Call CHNDEL("pos_Y_step")
Call CHNDEL("time_sample")

'***** Origin rotation

LI = Find("ch('Ped_eff') > 2", 1)

L3 = 50
R1 = LI 'row number of the track position channel to consider
R2 = 1 'X component of the reference vector
R3 = 0 'Y component of the reference vector
R4 = chd(R1, "pos_X") 'X component of the track vector
R5 = chd(R1, "pos_Y") 'Y component of the track vector
'R6 = acos(((R2*R4) + (R3*R5))/(sqrt(R2^2 + R3^2)*sqrt(R4^2 + R5^2))) 'calculation of the angle
between vectors track & reference
R6 = atan(R5/R4)
call formulacalc("ch(L3):= (cos(R6)*ch(pos_X)) + (sin(R6)*ch(pos_Y))") 'pos_X correction through
origin rotation
call formulacalc("ch(L3 + 1):= (-1*sin(R6)*ch(pos_X)) + (cos(R6)*ch(pos_Y))") 'pos_Y correction
through origin rotation
cn(L3) = "pos_Xc"
cn(L3 + 1) = "pos_Yc"

R30 = chdx(LI, CNo("pos_Y"))

Call Formulacalc ("Ch ('pos_Y'):= (Ch('pos_Y')-R30)")

LI = Find("ch('Ped_eff') > 1", 1)
R30 = chdx(LI, CNo("pos_Yc"))

Call Formulacalc ("Ch ('pos_Yc'):= (Ch('pos_Yc')-R30)")

LID = Find("abs(Ch('vx')) < 1", 1)
LID = LID + 50

L1 = cno("pos_Y")
Call DATABLEDEL(str(L1), LID, chnlength("pos_Y") )
L1 = cno("pos_Yc")
Call DATABLEDEL(str(L1), LID, chnlength("pos_Yc") )
L1 = cno("pos_X")
Call DATABLEDEL(str(L1), LID, chnlength("pos_X") )
L1 = cno("pos_Xc")
```

Call DATABLEDEL(str(L1),LID,chnlength("pos\_Xc") )

```
If abs(Cmax("Pos_Yc")) > abs(Cmin("Pos_Yc")) then
T8 = (round(Cmax("Pos_Yc"),1))
Else T8 = abs(round(Cmin("Pos_Yc"),1))
end if
```

```
CC("Pos_Yc") = T8
End sub
```

```
'-----
' Graf mu split + track mapping
'-----
```

```
Sub Graf_musplit_track()
'-----
```

```
'          Y AXIS
'-----
```

```
R29 = chdx(1,CNo("Distance"))
Call Formulacalc ("Ch('Distance'):= Ch('Distance')-R29")
LI = Find("ch('Ped_eff') > 1", 1)
R30 = chdx(LI,CNo("pos_Xc"))
```

```
LID = Find("abs(Ch('vx')) < 1", 1)
LID = LID + 50
R15 = round(chdx(LI,CNo("time")),1)
R16 = round(chdx(LID,CNo("time")),1)
R17 = round(chdx(LI,CNo("pos_Xc")))
R18 = round(chdx(Chnlength("pos_Xc")-1,CNo("pos_Xc")))
```

```
Call GRAPHObjOpen("2DAxis5")
Call GRAPHObjOpen("2DXAxis2_1")
  D2AXISXDIVMODE = "linear"
  D2AXISXSCALETYPE = "manual"
  D2AXISXBEGIN = R15-1
  D2AXISXEND = R16 + 1
  D2AXISXORIGIN = R15-1
  D2AXISXTICKDIST = "calculated from tick space"
  D2AXISXTICK = 1
  D2AXISXTICKCHN = "time"
  D2AXISXMINITICK = 0
  D2AXISXTICKTYPE = "bottom"
  D2AXISXTICKCHNN = ""
  D2AXISXTICKCHNF = ""
  D2AXISXTICKCHNC = ""
Call GRAPHObjClose("2DXAxis2_1")
Call GRAPHObjClose("2DAxis5")
```

```
Call GRAPHObjOpen("2DAxis6")
Call GRAPHObjOpen("2DXAxis3_1")
  D2AXISXDIVMODE = "linear"
  D2AXISXSCALETYPE = "manual"
  D2AXISXBEGIN = R15-1
  D2AXISXEND = R16 + 1
  D2AXISXORIGIN = R15-1
```

```

D2AXISXTICKDIST = "calculated from tick space"
D2AXISXTICK     = 1
D2AXISXTICKCHN = "time"
D2AXISXMINITICK = 0
D2AXISXTICKTYPE = "bottom"
D2AXISXTICKCHNN = ""
D2AXISXTICKCHNF = ""
D2AXISXTICKCHNC = ""
Call GRAPHObjClose("2DXAxis3_1")
Call GRAPHObjClose("2DAxis6")

```

```

Call GRAPHObjOpen("2DAxis2")
Call GRAPHObjOpen("2DXAxis4_1")
D2AXISXDIVMODE = "linear"
D2AXISXSCALETYPE = "manual"
D2AXISXBEGIN   = R15-1
D2AXISXEND     = R16 + 1
D2AXISXORIGIN  = R15-1
D2AXISXTICKDIST = "calculated from tick space"
D2AXISXTICK     = 1
D2AXISXTICKCHN = "time"
D2AXISXMINITICK = 0
D2AXISXTICKTYPE = "bottom"
D2AXISXTICKCHNN = ""
D2AXISXTICKCHNF = ""
D2AXISXTICKCHNC = ""
Call GRAPHObjClose("2DXAxis4_1")
Call GRAPHObjClose("2DAxis2")

```

```

Call GRAPHObjOpen("2DAxis1")
Call GRAPHObjOpen("2DXAxis1_1")
D2AXISXDIVMODE = "linear"
D2AXISXSCALETYPE = "manual"
D2AXISXBEGIN   = R17-25
D2AXISXEND     = R18 + 25
D2AXISXORIGIN  = R17-25
D2AXISXTICKDIST = "calculated from tick space"
D2AXISXTICK     = 50
D2AXISXTICKCHN = "time"
D2AXISXMINITICK = 0
D2AXISXTICKTYPE = "bottom"
D2AXISXTICKCHNN = ""
D2AXISXTICKCHNF = ""
D2AXISXTICKCHNC = ""
Call GRAPHObjClose("2DXAxis1_1")
Call GRAPHObjClose("2DAxis1")

```

```

'-----
'           Y AXIS
'-----

```

```
R29 = chdx(1,CNo("Distance"))
Call Formulacalc ("Ch('Distance'):=Ch('Distance')-R29")
LI = Find("ch('Ped_eff')> 1", 1)
R30 = chdx(LI,CNo("Distance"))
```

```
Call GRAPHObjOpen("2DAxis5")
Call GRAPHObjOpen("2DObj2_Curve2")
D2CCHNX      = "time"
D2CCHNY      = "vx"
D2CCHNY1     = 0
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "dark red"
D2CURVECOLORRGB = 46186688
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve2")
Call GRAPHObjOpen("2DObj2_Curve11")
D2CCHNX      = "time"
D2CCHNY      = "Ped_eff"
D2CCHNY1     = 0
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "other colors"
D2CURVECOLORRGB = 32768
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve11")
Call GRAPHObjOpen("2DObj2_Curve1")
D2CCHNX      = "time"
D2CCHNY      = "Ped_strk"
D2CCHNY1     = "time"
D2CCONSTX    = NOVALUE
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "other colors"
D2CURVECOLORRGB = 16711808
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 1
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve1")
Call GRAPHObjOpen("2DObj2_Curve6")
D2CCHNX      = "time"
```

```
D2CCHNY      = "MC_press"
D2CCHNY1     = 0
D2CCONSTX   = NOVALUE
D2CCONSTY   = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "black"
D2CURVECOLORRGB = 33554432
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW   = 1
D2LEGPDRAW  = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve6")
Call GRAPHObjOpen("2DObj2_Curve7")
D2CCHNX     = "time"
D2CCHNY     = "FL_press"
D2CCHNY1    = 0
D2CCONSTX   = NOVALUE
D2CCONSTY   = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "red"
D2CURVECOLORRGB = 33554687
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW   = 1
D2LEGPDRAW  = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve7")
Call GRAPHObjOpen("2DObj2_Curve8")
D2CCHNX     = "time"
D2CCHNY     = "FR_press"
D2CCHNY1    = 0
D2CCONSTX   = NOVALUE
D2CCONSTY   = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "green"
D2CURVECOLORRGB = 33619712
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW   = 1
D2LEGPDRAW  = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve8")
Call GRAPHObjOpen("2DObj2_Curve9")
D2CCHNX     = "time"
D2CCHNY     = "RL_press"
D2CCHNY1    = 0
D2CCONSTX   = NOVALUE
D2CCONSTY   = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Line"
D2CURVECOLOR = "blue"
D2CURVECOLORRGB = 50266112
```



```
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW        = 1
D2LEGPDRAW       = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve9")
Call GRAPHObjOpen("2DObj2_Curve10")
D2CCHNX          = "time"
D2CCHNY          = "RR_press"
D2CCHNY1         = 0
D2CCONSTX       = NOVALUE
D2CCONSTY       = NOVALUE
D2CAXISPAIRNO   = 1
D2CCURVETYPE    = "Line"
D2CURVECOLOR    = "violet"
D2CURVECOLORRGB = 50266367
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW        = 1
D2LEGPDRAW       = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj2_Curve10")
Call GRAPHObjClose("2DAxis5")
```

```
Call GRAPHObjOpen("2DAxis6")
Call GRAPHObjOpen("2DObj6_Curve1")
D2CCHNX          = "time"
D2CCHNY          = "pos_Yc"
D2CCHNY1         = 0
D2CCONSTX       = NOVALUE
D2CCONSTY       = NOVALUE
D2CAXISPAIRNO   = 2
D2CCURVETYPE    = "Line"
D2CURVECOLOR    = "black"
D2CURVECOLORRGB = 33554432
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW        = 1
D2LEGPDRAW       = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj6_Curve1")
Call GRAPHObjOpen("2DObj3_Curve1")
D2CCHNX          = "time"
D2CCHNY          = "yawR"
D2CCHNY1         = 0
D2CCONSTX       = NOVALUE
D2CCONSTY       = NOVALUE
D2CAXISPAIRNO   = 1
D2CCURVETYPE    = "Line"
D2CURVECOLOR    = "red"
D2CURVECOLORRGB = 33554687
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW        = 1
```

```
D2LEGPDRAW      =0
D2USECOMMONXCHN =0
Call GRAPHObjClose("2DObj3_Curve1")
Call GRAPHObjClose("2DAxis6")

Call GRAPHObjOpen("2DAxis2")
Call GRAPHObjOpen("2DObj4_Curve2")
D2CCHNX         ="time"
D2CCHNY         ="Steering angle"
D2CCHNY1        =0
D2CCONSTX       =NOVALUE
D2CCONSTY       =NOVALUE
D2CAXISPAIRNO   =1
D2CCURVETYPE    ="Line"
D2CURVECOLOR    ="black"
D2CURVECOLORRGB =33554432
D2CURVESPECCOLOR="red"
D2CURVESPECCORGB=33554687
D2LEGDRAW       =1
D2LEGPDRAW      =0
D2USECOMMONXCHN =0
Call GRAPHObjClose("2DObj4_Curve2")
Call GRAPHObjOpen("2DObj4_Curve3")
D2CCHNX         ="time"
D2CCHNY         ="Vhc_dec"
D2CCHNY1        =0
D2CCONSTX       =NOVALUE
D2CCONSTY       =NOVALUE
D2CAXISPAIRNO   =2
D2CCURVETYPE    ="Line"
D2CURVECOLOR    ="red"
D2CURVECOLORRGB =33554687
D2CURVESPECCOLOR="red"
D2CURVESPECCORGB=33554687
D2LEGDRAW       =1
D2LEGPDRAW      =0
D2USECOMMONXCHN =0
Call GRAPHObjClose("2DObj4_Curve3")
Call GRAPHObjClose("2DAxis2")

Call GRAPHObjOpen("2DAxis1")
Call GRAPHObjOpen("2DObj1_Curve1")
D2CCHNX         ="pos_Xc"
D2CCHNY         ="pos_Yc"
D2CCHNY1        =0
D2CCONSTX       =NOVALUE
D2CCONSTY       =NOVALUE
D2CAXISPAIRNO   =1
D2CCURVETYPE    ="Line"
D2CURVECOLOR    ="red"
D2CURVECOLORRGB =33554687
D2CURVESPECCOLOR="red"
D2CURVESPECCORGB=33554687
D2LEGDRAW       =0
D2LEGPDRAW      =0
D2USECOMMONXCHN =0
```



```
Call GRAPHObjClose("2DObj1_Curve1")
Call GRAPHObjOpen("2DObj1_Curve2")
D2CCHNX      = "time"
D2CCHNY      = "Vhc_dec"
D2CCHNY1     = "time"
D2CCONSTX    = R30
D2CCONSTY    = NOVALUE
D2CAXISPAIRNO = 1
D2CCURVETYPE = "Constant"
D2CURVECOLOR = "blue"
D2CURVECOLORRGB = 33554687
D2CURVESPECCOLOR = "red"
D2CURVESPECCORGB = 33554687
D2LEGDRAW    = 0
D2LEGPDRAW   = 0
D2USECOMMONXCHN = 0
Call GRAPHObjClose("2DObj1_Curve2")
Call GRAPHObjClose("2DAxis1")

call Picupdate ()
End sub
'-----
'
'                               Pncap analisys
'
'-----

Sub Pncap()

Call PICLOAD("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2. Macro\Temporal
PNCAP.LPD")
L30=0
Call SudDefLoad("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2. Macro\PNCAP.sud")
Call SudDlgShow("Main")
Choix = L30
If (DlgState = "IDCancel") Then
    Call AutoQuit("Que fas !!! I'has cagat Felip (no s'ha fet res)")
End If

'Tirebedding = L20
'Dryasfaltcold = L21
'Dryasfalshot = L22
'Wetasfaltcold = L23
'Wetasfalshot = L24

Call FILECLOSEALL() 'parece innecesario, pero no lo quites INTRIGADO? !!!!!
AutoDrvUser = "D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\"
Call FileNameGet("ANY", "FileRead", "*.DAT", "*.DAT", "Seleccionados", "Yes", "SELECCIONAR
FICHEROS A ANALIZAR")

FicheroActivo = FR("Seleccionados", 1)
Call DesglocePath(FicheroActivo, NombreFicheroActivo, PathFicheroActivo, Extension)
AutoDrvUser = PathFicheroActivo
```



```
If (DlgState = "IDCancel") Then
    Call AutoQuit("Que fas !!! l'has cagat Felip (no s'ha fet res)")
End If
```

```
'----- CREATION DE LA NUEVA CARPETA FINALS -----
-----
```

```
NewFolder = AutoDrvUser + "Finals\"
```

```
Fichero = NewFolder + "PNCAP.xls"
Set fso = CreateObject("Scripting.FileSystemObject")
If (fso.FolderExists(NewFolder)) Then
    msg = fldr & " exists."
Else
    CreateFolder(NewFolder)
    fso.CopyFile "D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2.
Macro\PNCAP_toyota.xls", NewFolder
End If
ReportFolderStatus = msg
```

```
Fichero2 = NewFolder + "PNCAP_results.dat"
Set fso = CreateObject("Scripting.FileSystemObject")
If (fso.FolderExists(NewFolder)) Then
    msg = fldr & " exists."
Else
    CreateFolder(NewFolder)
    fso.CopyFile "D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2.
Macro\PNCAP_results.dat", NewFolder
End If
ReportFolderStatus = msg
```

```
NewFolder3 = AutoDrvUser + "Frenadas\"
CreateFolder(NewFolder3)
```

```
'-----
```

```
AutoDrvUser = "D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\"
Call FILEOPEN("Seleccionados", 2)
i = 1 ' Linea que estamos leyendo del fichero "Seleccionados", que contiene los
      ' nombres de los ficheros a transformar
```

```
FicheroActivo = FR("Seleccionados", i)
```

```
Do While FicheroActivo < > "EOF"
```

```
    Call DATALOAD(FicheroActivo)
    Call DesglocePath(FicheroActivo, NombreFicheroActivo, PathFicheroActivo, Extension)
    CN(1) = "Time"
    Call FiltOffset
    Call BuscarIniFi
    Call INTERACTIONON()
    Call GrafPNCAP
    Call CalculDist
    Call Toyota
```

```
'Call EvoDistancia()

'guardar dades de cada archiu
Mtrix(i,1) = NombreFicheroActivo
Mtrix(i,2) = chdx(1,CNo("Va"))
Mtrix(i,3) = chdx(1,CNo("Sa"))
Mtrix(i,4) = chdx(1,CNo("VInc10"))

Mtrix(i,5) = chdx(1,CNo("V5km"))
Mtrix(i,6) = chdx(1,CNo("S1Inc10"))
Mtrix(i,7) = chdx(1,CNo("S2Inc10"))

Mtrix(i,8) = chdx(1,CNo("SpdApp"))
Mtrix(i,9) = chdx(1,CNo("MeanEff(t10-t5)"))
Mtrix(i,10) = chdx(1,CNo("MeanSpd(t0-2_t0)"))

Mtrix(i,11) = chdx(1,CNo("Delta V"))
Mtrix(i,12) = chdx(1,CNo("V initial"))

Mtrix(i,13) = chdx(1,CNo("MeanDec_80-40kph"))
Mtrix(i,14) = chdx(1,CNo("IniFrPadTemp"))
Mtrix(i,15) = chdx(1,CNo("IniRrPadTemp"))
Mtrix(i,16) = chdx(1,CNo("tABS"))

Mtrix(i,17) = chdx(1,CNo("t1-t0"))
Mtrix(i,18) = chdx(1,CNo("t3-t0"))

Mtrix(i,19) = chdx(1,CNo("VInc15"))
Mtrix(i,20) = chdx(1,CNo("S1Inc15"))
Mtrix(i,21) = chdx(1,CNo("S2Inc15"))

Mtrix(i,22) = chdx(1,CNo("MinSpd(t0-2_t0)"))
Mtrix(i,23) = chdx(1,CNo("MaxSpd(t0-2_t0)"))
Mtrix(i,24) = chdx(1,CNo("Time_Max_Ped"))
Call DATASAVE(NewFolder3 + NombreFicheroActivo + "_results" + Extension)
i = i + 1
FicheroActivo = FR("Seleccionados", i)

Loop
Call FILECLOSEALL()

Call DATADELALL(1)          '... HEADERDEL

Call CHNALLOC("File", 50, 1)
CL("File") = 50
Call CHNALLOC("Va", 50, 1)
CL("Va") = 50
Call CHNALLOC("Sa", 50, 1)
CL("Sa") = 50
Call CHNALLOC("VInc10",50,1)   '... GHDCHNNAME,GHDCHNLENGTH,CHNNO
CL("VInc10") = 50

Call CHNALLOC("V5km",50,1)    '... GHDCHNNAME,GHDCHNLENGTH,CHNNO
CL("V5km") = 50
Call CHNALLOC("S1Inc10",50,1) '... GHDCHNNAME,GHDCHNLENGTH,CHNNO
CL("S1Inc10") = 50
```



```
Call CHNALLOC("S2Inc10",50,1)      '... GHDCHNNAME,GHDCHNLENGTH,CHNNO  
CL("S2Inc10") = 50
```

```
Call CHNALLOC("SpdApp", 50, 1)  
CL("SpdApp") = 50  
Call CHNALLOC("MeanEff(t10-t5)", 50, 1)  
CL("MeanEff(t10-t5)") = 50  
Call CHNALLOC("MeanSpd(t0-2_t0)", 50, 1)  
CL("MeanSpd(t0-2_t0)") = 50
```

```
Call CHNALLOC("Delta V", 50, 1)  
CL("Delta V") = 50  
Call CHNALLOC("V initial", 50, 1)  
CL("V initial") = 50
```

```
Call CHNALLOC("MeanDec_80-40kph", 50, 1)  
CL("MeanDec_80-40kph") = 50  
Call CHNALLOC("IniFrPadTemp", 50, 1)  
CL("IniFrPadTemp") = 50  
Call CHNALLOC("IniRrPadTemp", 50, 1)  
CL("IniRrPadTemp") = 50  
Call CHNALLOC("tABS", 50, 1)  
CL("tABS") = 50
```

```
Call CHNALLOC("t1-t0", 50, 1)  
CL("t1-t0") = 50  
Call CHNALLOC("t3-t0", 50, 1)  
CL("t3-t0") = 50
```

```
Call CHNALLOC("VInc15",50,1)      '... GHDCHNNAME,GHDCHNLENGTH,CHNNO  
CL("VInc15") = 50  
Call CHNALLOC("S1Inc15",50,1)      '... GHDCHNNAME,GHDCHNLENGTH,CHNNO  
CL("S1Inc15") = 50  
Call CHNALLOC("S2Inc15",50,1)      '... GHDCHNNAME,GHDCHNLENGTH,CHNNO  
CL("S2Inc15") = 50  
Call CHNALLOC("MinSpd(t0-2_t0)", 50, 1)  
CL("MinSpd(t0-2_t0)") = 50  
Call CHNALLOC("MaxSpd(t0-2_t0)", 50, 1)  
CL("MaxSpd(t0-2_t0)") = 50  
Call CHNALLOC("Time_Max_Ped", 50, 1)  
CL("Time_Max_Ped") = 50
```

```
Call CHNALLOC("Ambient_T°", 1, 1)  
CL("Ambient_T°") = 1  
Call CHNALLOC("Wind_velocity", 1, 1)  
CL("Wind_velocity") = 1  
Call CHNALLOC("Wind_direccion", 1, 1)  
CL("Wind_direccion") = 1  
Call CHNALLOC("Humidity", 1, 1)  
CL("Humidity") = 1
```

```
j = i-1  
i = 1  
Do While i <= j
```



```
AnyString = Mtrix(i,1)
AnyString = Right(AnyString, 3) 'si el nombre del fichero tiene solo numeracion de dos digitos
                                'cambiar 3 por un 2
chdx(i,CNo("File")) = Val(AnyString)

chdx(i,CNo("Va")) = Mtrix(i,2)
chdx(i,CNo("Sa")) = Mtrix(i,3)
chdx(i,CNo("VInc10")) = Mtrix(i,4)

chdx(i,CNo("V5km")) = Mtrix(i,5)
chdx(i,CNo("S1Inc10")) = Mtrix(i,6)
chdx(i,CNo("S2Inc10")) = Mtrix(i,7)

chdx(i,CNo("SpdApp")) = Mtrix(i,8)
chdx(i,CNo("MeanEff(t10-t5)")) = Mtrix(i,9)
chdx(i,CNo("MeanSpd(t0-2_t0)")) = Mtrix(i,10)

chdx(i,CNo("Delta V")) = Mtrix(i,11)
chdx(i,CNo("V initial")) = Mtrix(i,12)

chdx(i,CNo("MeanDec_80-40kph")) = Mtrix(i,13)
chdx(i,CNo("IniFrPadTemp")) = Mtrix(i,14)
chdx(i,CNo("IniRrPadTemp")) = Mtrix(i,15)
chdx(i,CNo("tABS")) = Mtrix(i,16)

chdx(i,CNo("t1-t0")) = Mtrix(i,17)
chdx(i,CNo("t3-t0")) = Mtrix(i,18)

chdx(i,CNo("VInc15")) = Mtrix(i,19)
chdx(i,CNo("S1Inc15")) = Mtrix(i,20)
chdx(i,CNo("S2Inc15")) = Mtrix(i,21)

chdx(i,CNo("MinSpd(t0-2_t0)")) = Mtrix(i,22)
chdx(i,CNo("MaxSpd(t0-2_t0)")) = Mtrix(i,23)
chdx(i,CNo("Time_Max_Ped")) = Mtrix(i,24)

i=i+1
Loop

'----- PEGADO DE LOS DATOS METEOROLICOS -----
-----

AutoDrvUser = NewFolder
T8 = ""
T9 = ""
R5 = ""
R6 = ""
R7 = ""
R8 = ""
R9 = ""
R10 = ""
R11 = ""
R12 = ""
R13 = ""
R14 = ""
R15 = ""
```



```
R16 = ""
R17 = ""
R18 = ""
R19 = ""
R20 = ""
R21 = ""
R22 = ""
R23 = ""
R24 = ""
R25 = ""
R26 = ""
R27 = ""
R28 = ""
Call SudDefLoad("D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2. Macro\Datos
meteorologicos.sud")
Call SudDlgShow("Main")

If R26 < 10 then
  If R27 < 10 then
    T8 = "0" + str(R26) + "-" + "0" + str(R27) + "-" + str(R28)
  else
    T8 = "0" + str(R26) + "-" + str(R27) + "-" + str(R28)
  End If
else
  If R27 < 10 then
    T8 = str(R26) + "-" + "0" + str(R27) + "-" + str(R28)
  else
    T8 = str(R26) + "-" + str(R27) + "-" + str(R28)
  End If
End If

Fecha = T8

Call CHNALLOC("Asfalt T°1", 1, 1)
Call CHNALLOC("Asfalt T°2", 1, 1)
Call CHNALLOC("Asfalt T°3", 1, 1)
Call CHNALLOC("Asfalt T°4", 1, 1)
Call CHNALLOC("Asfalt T°5", 1, 1)
Call CHNALLOC("Asfalt T°6", 1, 1)
Call CHNALLOC("Asfalt T°7", 1, 1)
Call CHNALLOC("Asfalt T°8", 1, 1)
Call CHNALLOC("Asfalt T°9", 1, 1)
Call CHNALLOC("Asfalt T°10", 1, 1)
Call CHNALLOC("Asfalt T°11", 1, 1)
Call CHNALLOC("Asfalt T°12", 1, 1)
Call CHNALLOC("Asfalt T°13", 1, 1)
Call CHNALLOC("Asfalt T°14", 1, 1)
Call CHNALLOC("Asfalt T°15", 1, 1)

'Tasfaltolni = R24
'Tasfaltofin = R25
Coche = T8 + " - " + T9
ChnVal(1, CNo("Asfalt T°1")) = R5
ChnVal(1, CNo("Asfalt T°2")) = R6
ChnVal(1, CNo("Asfalt T°3")) = R7
```





```
ChnVal(1, CNo("Asfalt T°4")) = R8  
ChnVal(1, CNo("Asfalt T°5")) = R9  
ChnVal(1, CNo("Asfalt T°6")) = R10  
ChnVal(1, CNo("Asfalt T°7")) = R11  
ChnVal(1, CNo("Asfalt T°8")) = R12  
ChnVal(1, CNo("Asfalt T°9")) = R13  
ChnVal(1, CNo("Asfalt T°10")) = R14  
ChnVal(1, CNo("Asfalt T°11")) = R15  
ChnVal(1, CNo("Asfalt T°12")) = R16  
ChnVal(1, CNo("Asfalt T°13")) = R17  
ChnVal(1, CNo("Asfalt T°14")) = R18  
ChnVal(1, CNo("Asfalt T°15")) = R19
```

```
If R20 < 10 then  
  If R21 < 10 then  
    T9 = "0" + str(R20) + ":" + "0" + str(R21)  
    else  
    T9 = "0" + str(R20) + ":" + str(R21)  
  End If  
  else  
  If R21 < 10 then  
    T9 = str(R20) + ":" + "0" + str(R21)  
    else  
    T9 = str(R20) + ":" + str(R21)  
  End If  
End IfIf R22 < 10 then  
  If R23 < 10 then  
    T10 = "0" + str(R22) + ":" + "0" + str(R23)  
    else  
    T10 = "0" + str(R22) + ":" + str(R23)  
  End If  
  else  
  If R23 < 10 then  
    T10 = str(R22) + ":" + "0" + str(R23)  
    else  
    T10 = str(R22) + ":" + str(R23)  
  End If  
End If
```

```
Call DoOLECommunicationMeteo(10)
```

'-----

```
CL("File") = j  
Call CHNMULTIPLESORT(1,"2-24",0,1) '...  
CALCXCHN,CALCYCHN, SORTSWITCH, CHNMSORTIP
```

```
If choix = 0 then  
  Call DATASAVE(PathFicheroActivo + "Finals\" + "Tire_bedding_results" + Extension)  
End If  
If choix = 1 then  
  Call DATASAVE(PathFicheroActivo + "Finals\" + "Dry_cold_results" + Extension)  
End If
```



```
If choix = 2 then
    Call DATASAVE(PathFicheroActivo + "Finals\" + "Dry_hot_results" + Extension)
End If
If choix = 3 then
    Call DATASAVE(PathFicheroActivo + "Finals\" + "Wet_cold_results" + Extension)
End If
If choix = 4 then
    Call DATASAVE(PathFicheroActivo + "Finals\" + "Wet_hot_results" + Extension)
End If

AutoDrvUser = NewFolder
Call DoOLECommunicationPNCAPtoy(10)
L1 = 6
end sub

'-----
' FILTRAR i OFFSET
'-----

sub FiltOffset()
    ' Call CHNFILTCALC("Time", "Vhc_spd", "Vhc_spd", "IIR", "Butterworth", "Low
pass", 7, 7, 0, 0, 1.2, 25, "Hamming", 1, 1) '...
X, Y, E, FILTSTRUC, FILTSTYLE, FILTTYPE, FILTDEGREE, FILTLIMIT, FILTLOWLIMIT, FILTUPPLIMIT, FILT
WAVE, FILTSAMPLES, FILTWNDFCT, FILTZEROPHASE, FILTCORRECTION
    ' Call CHNFILTCALC("Time", "Vhc_dec", "Vhc_dec", "IIR", "Butterworth", "Low
pass", 7, 7, 0, 0, 1.2, 25, "Hamming", 1, 1) '...
X, Y, E, FILTSTRUC, FILTSTYLE, FILTTYPE, FILTDEGREE, FILTLIMIT, FILTLOWLIMIT, FILTUPPLIMIT, FILT
WAVE, FILTSAMPLES, FILTWNDFCT, FILTZEROPHASE, FILTCORRECTION
    If cno("Vhc_spd5") <> 0 then
        cn("Vhc_spd5") = ("Vhc_spd")
    end if
    Call CHNSMOOTH("Vhc_spd", "Vhc_spd", 8)
    Call CHNSMOOTH("Vhc_dec", "Vhc_dec", 8)

    L4 = CNo("ped_eff")
    R2 = 0
    L3 = CHNLENGTH(L4)
    L3 = 200
    R1 = 0
    L6 = 1
    Do While L6 <= L3
        R5 = CHD(L6, L4)
        R1 = R1 + R5
        L6 = L6 + 1 ' <<< Step 1 or Step -1
    Loop
    R2 = R1/200
    Call FormulaCalc("CH(L4): = CH(L4)-R2")

    L4 = CNo("MC_press")
    R2 = 0
    L3 = CHNLENGTH(L4)
    L3 = 200
    R1 = 0
    L6 = 1
    Do While L6 <= L3
        R5 = CHD(L6, L4)
        R1 = R1 + R5
```

```
L6 = L6 + 1 ' <<< Step 1 or Step -1  
Loop  
R2 = R1/200  
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```

```
L4 = CNo("FR_press")  
R2 = 0  
L3 = CHNLENGTH(L4)  
L3 = 200  
R1 = 0  
L6 = 1  
Do While L6 <= L3  
  R5 = CHD(L6, L4)  
  R1 = R1 + R5  
  L6 = L6 + 1 ' <<< Step 1 or Step -1  
Loop  
R2 = R1/200  
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```

```
L4 = CNo("RR_press")  
R2 = 0  
L3 = CHNLENGTH(L4)  
L3 = 200  
R1 = 0  
L6 = 1  
Do While L6 <= L3  
  R5 = CHD(L6, L4)  
  R1 = R1 + R5  
  L6 = L6 + 1 ' <<< Step 1 or Step -1  
Loop  
R2 = R1/200  
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```

```
L4 = CNo("FL_press")  
R2 = 0  
L3 = CHNLENGTH(L4)  
L3 = 200  
R1 = 0  
L6 = 1  
Do While L6 <= L3  
  R5 = CHD(L6, L4)  
  R1 = R1 + R5  
  L6 = L6 + 1 ' <<< Step 1 or Step -1  
Loop  
R2 = R1/200  
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```

```
L4 = CNo("RL_press")  
R2 = 0  
L3 = CHNLENGTH(L4)  
L3 = 200  
R1 = 0  
L6 = 1  
Do While L6 <= L3  
  R5 = CHD(L6, L4)
```

```
R1 = R1 + R5
L6 = L6 + 1 ' <<< Step 1 or Step -1
Loop
R2 = R1/200
Call FormulaCalc("CH(L4): = CH(L4)-R2")
```

End Sub

```
'-----
' CALCULDISTANCIA
'-----
```

Sub CalculDist()

```
Linea50daN = Find("Ch('Ped_eff') > 50", 1)
IniForce = chdx(LinealNi,CNo("Ped_eff"))
Force50daN = chdx(Linea50daN,CNo("Ped_eff"))
Time50daN = chdx(Linea50daN,CNo("Time"))
```

```
Speed1 = chdx(LinealNi,CNo("Vhc_spd"))
SpeedInc10 = chdx(Linealnc10,CNo("Vhc_spd"))
SpeedInc15 = chdx(Linealnc15,CNo("Vhc_spd"))
Speed5 = chdx(LineaS5,CNo("Vhc_spd"))
```

```
Dist1 = chdx(LinealNi,CNo("Distance"))
Dist2 = chdx(LineaFi,CNo("Distance"))
DistInc10 = chdx(Linealnc10,CNo("Distance"))
DistInc15 = chdx(Linealnc15,CNo("Distance"))
Dist5km = chdx(LineaS5,CNo("Distance"))
```

SpdApp = (Force50daN-IniForce)/(Time50daN-Time1)

```
Call CHNALLOC("Va",1,1)      '... GHDCHNNAME,GHDCHNLENGTH,CHNNO
CL("Va") = 1
chdx(1,CNo("Va")) = Speed1
```

```
Call CHNALLOC("Sa",1,1)      '... GHDCHNNAME,GHDCHNLENGTH,CHNNO
CL("Sa") = 1
chdx(1,CNo("Sa")) = Dist2-Dist1
```

```
Call CHNALLOC("VInc10",1,1)   '... GHDCHNNAME,GHDCHNLENGTH,CHNNO
CL("VInc10") = 1
chdx(1,CNo("VInc10")) = SpeedInc10
```

```
Call CHNALLOC("VInc15",1,1)   '... GHDCHNNAME,GHDCHNLENGTH,CHNNO
CL("VInc15") = 1
chdx(1,CNo("VInc15")) = SpeedInc15
```

```
Call CHNALLOC("V5km",1,1)     '... GHDCHNNAME,GHDCHNLENGTH,CHNNO
CL("V5km") = 1
```



```
chdx(1,CNo("V5km")) = Speed5
```

```
Call CHNALLOC("S1Inc10",1,1)      '... GHDCHNNAME,GHDCHNLENGTH,CHNNO  
CL("S1Inc10") = 1  
chdx(1,CNo("S1Inc10")) = DistInc10-Dist1
```

```
Call CHNALLOC("S2Inc10",1,1)      '... GHDCHNNAME,GHDCHNLENGTH,CHNNO  
CL("S2Inc10") = 1  
chdx(1,CNo("S2Inc10")) = Dist5km-DistInc10
```

```
Call CHNALLOC("S1Inc15",1,1)      '... GHDCHNNAME,GHDCHNLENGTH,CHNNO  
CL("S1Inc15") = 1  
chdx(1,CNo("S1Inc15")) = DistInc15-Dist1
```

```
Call CHNALLOC("S2Inc15",1,1)      '... GHDCHNNAME,GHDCHNLENGTH,CHNNO  
CL("S2Inc15") = 1  
chdx(1,CNo("S2Inc15")) = Dist5km-DistInc15
```

```
Call CHNALLOC("SpdApp",1,1)       '... GHDCHNNAME,GHDCHNLENGTH,CHNNO  
CL("SpdApp") = 1  
chdx(1,CNo("SpdApp")) = SpdApp
```

```
End Sub
```

```
'-----  
' BUSCARINIFI  
'-----
```

```
Sub BuscarIniFi()
```

```
LinealNi = Find("(Ch('Ped_eff') > 2)", 1)  
Speed1 = chdx(LinealNi,CNo("Vhc_spd"))  
R10 = Speed1 ' Valor vel x poder utilitzar el Find next 2 lines  
Linealnc10 = Find("(Ch('Vhc_spd') < (R10-10)",LinealNi)  
Linealnc15 = Find("(Ch('Vhc_spd') < (R10-15)",Linealnc10)  
LineaS5 = Find("(Ch('Vhc_spd') < 5",Linealnc15 + 450)  
LineaFi = Find("(Ch('Ped_eff') < 8)", LineaS5)
```

```
If LineaFi = 0 then  
    LineaFi = CL("Vhc_spd")  
End If
```

```
Time1 = chdx(LinealNi,CNo("Time"))  
R9 = Time1  
TimeInc10 = chdx(Linealnc10,CNo("Time"))  
TimeInc15 = chdx(Linealnc15,CNo("Time"))  
TimeS5 = chdx(LineaS5,CNo("Time"))  
Time2 = chdx(LineaFi,CNo("Time"))
```

```
Call CHNALLOC("Ti",1,1)          '... GHDCHNNAME,GHDCHNLENGTH,CHNNO  
CL("Ti") = 2  
chdx(1,CNo("Ti")) = Time1  
chdx(2,CNo("Ti")) = Time1
```

```
Call CHNALLOC("Tinc10",1,1)      '... GHDCHNNAME,GHDCHNLENGTH,CHNNO  
CL("Tinc10") = 2
```



```
chdx(1,CNo("Tinc10")) = TimeInc10  
chdx(2,CNo("Tinc10")) = TimeInc10
```

```
Call CHNALLOC("Tinc15",1,1)      '... GHDCHNNAME,GHDCHNLENGTH,CHNNO  
CL("Tinc15") = 2  
chdx(1,CNo("Tinc15")) = TimeInc15  
chdx(2,CNo("Tinc15")) = TimeInc15
```

```
Call CHNALLOC("Ts5",1,1)        '... GHDCHNNAME,GHDCHNLENGTH,CHNNO  
CL("Ts5") = 2  
chdx(1,CNo("Ts5")) = TimeS5  
chdx(2,CNo("Ts5")) = TimeS5
```

```
Call CHNALLOC("Tf",1,1)         '... GHDCHNNAME,GHDCHNLENGTH,CHNNO  
CL("Tf") = 2  
chdx(1,CNo("Tf")) = Time2  
chdx(2,CNo("Tf")) = Time2
```

```
Call CHNALLOC("Ref1",1,1)       '... GHDCHNNAME,GHDCHNLENGTH,CHNNO  
CL("Ref1") = 2  
chdx(1,CNo("Ref1")) = 0  
chdx(2,CNo("Ref1")) = 105
```

```
Call CHNALLOC("Ref2",1,1)       '... GHDCHNNAME,GHDCHNLENGTH,CHNNO  
CL("Ref2") = 2  
chdx(1,CNo("Ref2")) = 0  
chdx(2,CNo("Ref2")) = 105
```

```
Call CHNALLOC("Ref3",1,1)       '... GHDCHNNAME,GHDCHNLENGTH,CHNNO  
CL("Ref3") = 2  
chdx(1,CNo("Ref3")) = 0  
chdx(2,CNo("Ref3")) = 105
```

```
Call CHNALLOC("Ref4",1,1)       '... GHDCHNNAME,GHDCHNLENGTH,CHNNO  
CL("Ref4") = 2  
chdx(1,CNo("Ref4")) = 0  
chdx(2,CNo("Ref4")) = 105
```

```
Call CHNALLOC("Ref5",1,1)       '... GHDCHNNAME,GHDCHNLENGTH,CHNNO  
CL("Ref5") = 2  
chdx(1,CNo("Ref5")) = 0  
chdx(2,CNo("Ref5")) = 105
```

```
Call VIEWNEW("C:\Archivos de programa\National Instruments\DIAdem 8.00\Libr\gra\UNR_4A")
```

```
Call VIEWOBJOPEN("2DAXIS1")
```

```
Call VIEWOBJNEW("2D-Curve", "CURVE1")  
Call VIEWOBJOPEN("CURVE1")
```

```
VWCURVECHNX = "Time"  
VWCURVECHNY = "MC_press"  
VWCURVECOLOR = "black"
```



Call VIEWOBJCLOSE("CURVE1")

Call VIEWOBJNEW("2D-Curve", "CURVE2")  
Call VIEWOBJOPEN("CURVE2")

VWCURVECHNX = "Time"  
VWCURVECHNY = "FL\_press"  
VWCURVECOLOR = "red"

Call VIEWOBJCLOSE("CURVE2")

Call VIEWOBJNEW("2D-Curve", "CURVE3")  
Call VIEWOBJOPEN("CURVE3")

VWCURVECHNX = "Time"  
VWCURVECHNY = "FR\_press"  
VWCURVECOLOR = "green"

Call VIEWOBJCLOSE("CURVE3")

Call VIEWOBJNEW("2D-Curve", "CURVE4")  
Call VIEWOBJOPEN("CURVE4")

VWCURVECHNX = "Time"  
VWCURVECHNY = "RL\_press"  
VWCURVECOLOR = "blue"

Call VIEWOBJCLOSE("CURVE4")

Call VIEWOBJNEW("2D-Curve", "CURVE5")  
Call VIEWOBJOPEN("CURVE5")

VWCURVECHNX = "Time"  
VWCURVECHNY = "RR\_press"  
VWCURVECOLOR = "violet"

Call VIEWOBJCLOSE("CURVE5")

Call ViewCursPosSet(2,0,3,0)

Call VIEWOBJCLOSE("2DAXIS1")



```
Call VIEWOBJOPEN("2DAXIS2")

Call VIEWOBJNEW("2D-Curve", "CURVE1")
Call VIEWOBJOPEN("CURVE1")
  VWCURVECHNX = "Time"
  VWCURVECHNY = "Vhc_spd"
  VWCURVECOLOR = "red"
Call VIEWOBJCLOSE("CURVE1")

Call VIEWOBJNEW("2D-Curve", "CURVE2")
Call VIEWOBJOPEN("CURVE2")
  VWCURVECHNX = "Time"
  VWCURVECHNY = "Ped_eff"
  VWCURVECOLOR = "blue"
Call VIEWOBJCLOSE("CURVE2")

Call VIEWOBJNEW("2D-Curve", "CURVE3")
Call VIEWOBJOPEN("CURVE3")
  VWCURVECHNX = "Ti"
  VWCURVECHNY = "Ref1"
  VWCURVECOLOR = "black"
Call VIEWOBJCLOSE("CURVE3")

Call VIEWOBJNEW("2D-Curve", "CURVE4")
Call VIEWOBJOPEN("CURVE4")
  VWCURVECHNX = "Tinc10"
  VWCURVECHNY = "Ref2"
  VWCURVECOLOR = "black"
Call VIEWOBJCLOSE("CURVE4")

Call VIEWOBJNEW("2D-Curve", "CURVE5")
Call VIEWOBJOPEN("CURVE5")
  VWCURVECHNX = "Tinc15"
  VWCURVECHNY = "Ref3"
  VWCURVECOLOR = "black"
Call VIEWOBJCLOSE("CURVE5")

Call VIEWOBJNEW("2D-Curve", "CURVE6")
Call VIEWOBJOPEN("CURVE6")
  VWCURVECHNX = "Ts5"
  VWCURVECHNY = "Ref4"
  VWCURVECOLOR = "black"
Call VIEWOBJCLOSE("CURVE6")

Call VIEWOBJNEW("2D-Curve", "CURVE7")
Call VIEWOBJOPEN("CURVE7")
  VWCURVECHNX = "Tf"
  VWCURVECHNY = "Ref5"
  VWCURVECOLOR = "black"
Call VIEWOBJCLOSE("CURVE7")

Call VIEWOBJCLOSE("2DAXIS2")

Call VIEWOBJOPEN("2DAXIS3")
```





```
Call VIEWOBJNEW("2D-Curve", "CURVE1")
Call VIEWOBJOPEN("CURVE1")
  VWCURVECHNX = "Time"
  VWCURVECHNY = "FRpad_t"
  VWCURVECOLOR = "red"
Call VIEWOBJCLOSE("CURVE1")
```

```
Call VIEWOBJNEW("2D-Curve", "CURVE2")
Call VIEWOBJOPEN("CURVE2")
  VWCURVECHNX = "Time"
  VWCURVECHNY = "RRpad_t"
  VWCURVECOLOR = "green"
Call VIEWOBJCLOSE("CURVE2")
```

```
Call VIEWOBJCLOSE("2DAXIS3")
```

```
Call VIEWOBJOPEN("2DAXIS4")
  Call VIEWOBJNEW("2D-Curve", "CURVE1")
  Call VIEWOBJOPEN("CURVE1")
    VWCURVECHNX = "Time"
    VWCURVECHNY = "Distance"
    VWCURVECOLOR = "red"
  Call VIEWOBJCLOSE("CURVE1")
Call VIEWOBJCLOSE("2DAXIS4")
```

```
Call VIEWUPDATE()
```

```
Call VIEWCURSTYPESET("Band")
Call ViewCursPosSet(2,0,3,0)
Call ViewAxisZoom("2DAXIS1", 1)
Call ViewUpdate()
Call ViewCursPosSet(2,0,2.5,0)
Call ViewUpdate()
```

```
'Call ViewCursPosSet(Time1,0,Time2,0)
End Sub
```

```
'-----
' EXTRAS DE TOYOTA
'-----
```

```
Sub Toyota()
```

```
LineaFinAcc = Find("(Ch('ACCS')) < 5", 1)
TimeFinAcc = chdx(LineaFinAcc, CNo("Time"))
LineaTimeFinAcc = Find("(Ch('ACCS')) < 5", 1) '""Find("(Ch('Time')) = 1.9", 1)
Find("(Ch('ACCS')) < 5", 1) 'Find("(Ch('Time')) = 1.9", 1)
tABS = chdx(chnlength("XCop_Time"), CNo("XCop_Time")) - chdx(1, CNo("XCop_Time"))
Call Chndel (CNo("XCop_Time"))
Call Chndel (CNo("YCop_MC_press"))
Call Chndel (CNo("YCop_FL_press"))
Call Chndel (CNo("YCop_FR_press"))
Call Chndel (CNo("YCop_RL_press"))
Call Chndel (CNo("YCop_RR_press"))
```

```
STATSEL(1)      = "No"  
STATSEL(2)      = "No"  
STATSEL(3)      = "No"  
STATSEL(4)      = "No"  
STATSEL(5)      = "No"  
STATSEL(6)      = "Yes"  
STATSEL(7)      = "No"  
STATSEL(8)      = "No"  
STATSEL(9)      = "No"  
STATSEL(10)     = "No"  
STATSEL(11)     = "No"  
STATSEL(12)     = "No"  
STATSEL(13)     = "No"  
STATSEL(14)     = "No"  
STATSEL(15)     = "No"  
STATSEL(16)     = "No"  
STATSEL(17)     = "No"  
STATSEL(18)     = "No"  
STATSEL(19)     = "No"  
STATSEL(20)     = "No"  
STATSEL(21)     = "No"  
STATSEL(22)     = "No"  
STATCLIPCOPY    = 0  
STATCLIPVALUE   = 0  
STATFORMAT      = ""
```

```
Call STATBLOCKCALC("Channel",str(Linealnc10)&"-"&str(LineaS5),str(CNo("Ped_eff"))) '...  
STATDIREC,ROWNOSTR,CHNNOSTR  
CN("Arithm_mean") = "MeanEff(t10-t5)"
```

```
STATSEL(1)      = "No"  
STATSEL(2)      = "No"  
STATSEL(3)      = "No"  
STATSEL(4)      = "Yes"  
STATSEL(5)      = "Yes"  
STATSEL(6)      = "Yes"  
STATSEL(7)      = "No"  
STATSEL(8)      = "No"  
STATSEL(9)      = "No"  
STATSEL(10)     = "No"  
STATSEL(11)     = "No"  
STATSEL(12)     = "No"  
STATSEL(13)     = "No"  
STATSEL(14)     = "No"  
STATSEL(15)     = "No"  
STATSEL(16)     = "No"  
STATSEL(17)     = "No"  
STATSEL(18)     = "No"  
STATSEL(19)     = "No"  
STATSEL(20)     = "No"  
STATSEL(21)     = "No"  
STATSEL(22)     = "No"  
STATCLIPCOPY    = 0  
STATCLIPVALUE   = 0
```

STATFORMAT = ""

```
Call STATBLOCKCALC("Channel","1-951",str(CNo("Vhc_spd"))) '...
STATDIREC,ROWNOSTR,CHNNOSTR '--- ATTENTION t0-1.9s A CHANGER
CN("Arithm_mean") = "MeanSpd(t0-2_t0)"
CN("Minimum value") = "MinSpd(t0-2_t0)"
CN("Maximum value") = "MaxSpd(t0-2_t0)"
```

```
Call CHNALLOC("Delta V",1,1) '... GHDCNNNAME,GHDCHNLENGTH,CHNNO
CL("Delta V") = 1
chdx(1,CNo("Delta V")) = (chdx(1,CNo("MaxSpd(t0-2_t0)"))-chdx(1,CNo("MinSpd(t0-2_t0)")))
```

```
Call CHNALLOC("V initial",1,1) '... GHDCNNNAME,GHDCHNLENGTH,CHNNO
CL("V initial") = 1
chdx(1,CNo("V initial")) = chdx(LineaTimeFinAcc,CNo("Vhc_spd"))
R30 = chdx(LineaTimeFinAcc,CNo("Vhc_spd"))
```

```
STATSEL(1) = "No"
STATSEL(2) = "No"
STATSEL(3) = "No"
STATSEL(4) = "No"
STATSEL(5) = "Yes"
STATSEL(6) = "No"
STATSEL(7) = "No"
STATSEL(8) = "No"
STATSEL(9) = "No"
STATSEL(10) = "No"
STATSEL(11) = "No"
STATSEL(12) = "No"
STATSEL(13) = "No"
STATSEL(14) = "No"
STATSEL(15) = "No"
STATSEL(16) = "No"
STATSEL(17) = "No"
STATSEL(18) = "No"
STATSEL(19) = "No"
STATSEL(20) = "No"
STATSEL(21) = "No"
STATSEL(22) = "No"
STATCLIPCOPY = 0
STATCLIPVALUE = 0
STATFORMAT = ""
```

```
Call STATBLOCKCALC("Channel","1-",str(CNo("Ped_eff"))) '...
STATDIREC,ROWNOSTR,CHNNOSTR
CN("Maximum value") = "Time_Max_Ped"
MaxPed = chdx(1,CNo("Time_Max_Ped"))
R8 = MaxPed
LineaMaxPed = Find("(Ch('Ped_eff')) = > R8",LineaIni)
'TimeMaxPed = chdx(LineaMaxPed,CNo("Time"))
```

```
Linea80kph = Find("(Ch('Vhc_spd')) <= 80",LineaInc15)
Linea40kph = Find("(Ch('Vhc_spd')) <= 40",Linea80kph)
```



```
Call CHNALLOC("MeanDec_80-40kph",1,1)      '...
GHDCHNNAME,GHDCHNLENGTH,CHNNO
CL("MeanDec_80-40kph") = 1
chdx(1,CNo("MeanDec_80-40kph")) = ((chdx(Linea80kph,CNo("Vhc_spd"))-
chdx(Linea40kph,CNo("Vhc_spd")))/3.6)/(chdx(Linea40kph,CNo("Time"))-
chdx(Linea80kph,CNo("Time")))

Call CHNALLOC("IniFrPadTemp",1,1)          '... GHDCHNNAME,GHDCHNLENGTH,CHNNO
CL("IniFrPadTemp") = 1
chdx(1,CNo("IniFrPadTemp")) = chdx(Linealni,CNo("FRpad_t"))

Call CHNALLOC("IniRrPadTemp",1,1)          '... GHDCHNNAME,GHDCHNLENGTH,CHNNO
CL("IniRrPadTemp") = 1
chdx(1,CNo("IniRrPadTemp")) = chdx(Linealni,CNo("RRpad_t"))

Call CHNALLOC("tABS",1,1)                  '... GHDCHNNAME,GHDCHNLENGTH,CHNNO
CL("tABS") = 1
chdx(1,CNo("tABS")) = tABS

Call CHNALLOC("Time_Max_Ped",1,1)          '... GHDCHNNAME,GHDCHNLENGTH,CHNNO
CL("Time_Max_Ped") = 1
chdx(1,CNo("Time_Max_Ped")) = TimeMaxPed

Call CHNALLOC("t1-t0",1,1)                  '... GHDCHNNAME,GHDCHNLENGTH,CHNNO
CL("t1-t0") = 1
chdx(1,CNo("t1-t0")) = R9-TimeFinAcc

Call CHNALLOC("t3-t0",1,1)                  '... GHDCHNNAME,GHDCHNLENGTH,CHNNO
CL("t3-t0") = 1
chdx(1,CNo("t3-t0")) = TimeMaxPed-R9

AutoDrvUser = "D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\"
End Sub
```

```
' -----
' Name:      DoWait
'
' Purpose:   Set wait-message in Excel and check DDD-communication in a loop.
'
' Parameters: WaitTime = Number of loops for wait
' -----
```

```
Sub DoWait(ByVal WaitTime)

Do
    ExcelSheet.Cells(2, 3).Value = CStr(WaitTime)
    Call CheckError
    WaitTime = WaitTime - 1
Loop Until WaitTime < 0
```

```
End Sub
```

```
' -----
' Name:      CheckError
'
```



' Purpose: Check error status and show message if necessary.  
,

' Parameters: None  
,  
-----

Sub CheckError()

' If an error has occurred.  
If Err.Number <> 0 then

' Restore DIAdem-window.  
Call WndShow("SHELL", "NORMAL")

' Show error message.  
Call MsgBoxDisp("Error during OLE-communication!" & vbCrLf & \_  
"Error number: "& CStr(Err.Number) & vbCrLf & \_  
& Err.Description, , "MsgTypeAlert")

' Reset error status.  
Err.Clear

' DIAdem minimieren.  
Call WndShow("SHELL", "MINIMIZE")  
End If

End Sub

-----  
' Name: DoOLECommunicationtire  
,

' Purpose: Perform OLE-communication between DIAdem and Excel.  
,

' Parameters: None  
-----

Sub DoOLECommunicationPNCAPtoy(ByVal j)

AutoDrvUser = NewFolder  
' Switch off default error handling --> no error messages.  
On Error Resume Next

' Start Excel via OLE.  
' Always a new instance of Excel will be created.  
Set Excel = CreateObject("Excel.Application")  
Call CheckError

' Make Excel visible. Until now Excel was not visible.  
Excel.Visible = True

' Maximize Excel-window.  
Excel.WindowState = xlMaximized

' Minimize DIAdem.  
Call WndShow("SHELL", "MINIMIZE")



```
' Open prepared DIAdem-Table in Excel.
Excel.Workbooks.Open(AutoDrvUser & DiademExcelWorkbook)

' Set reference to Excel-sheet.
' With the help of this reference you can easily access the Excel-sheet.
Set ExcelSheet = Excel.Workbooks(DiademExcelWorkbook).Sheets("Dades Orig")

' Select first cell in worksheet.
ExcelSheet.Cells(1, 1).Select

' Switch off screen-updating --> much faster data transfer.
Excel.ScreenUpdating = False

' Transfer single data column- and rowwise.
DuracionTiempo = R4

If Choix = 0 then

    ExcelSheet.Cells(2, 1).Value = Coche
    '----- datos tire bedding -----
    For DataCol = 1 To 18
        For DataRow = 1 To 15
            ExcelSheet.Cells(DataRow + 6, DataCol + 2).Value = ChnVal(DataRow, DataCol)
        Next
    Next

    For DataCol = 1 To 15
        ExcelSheet.Cells(DataCol + 6, 21).Value = ChnVal(1, CNo("Asfalt T°1") + DataCol-1)
    Next

    For m = 1 to DuracionTiempo
        ExcelSheet.Cells(m + 6, 22).Value = ChnVal(m, CNo("Ambient_T°"))
        ExcelSheet.Cells(m + 6, 23).Value = ChnVal(m, CNo("Humidity"))
        ExcelSheet.Cells(m + 6, 24).Value = ChnVal(m, CNo("Wind_velocity"))
        ExcelSheet.Cells(m + 6, 25).Value = ChnVal(m, CNo("Wind_direccion"))

        Call CheckError
    Next

end If

If Choix = 1 then

    ExcelSheet.Cells(2, 1).Value = Coche
    '----- datos DRY asphalt cold T° -----
    For DataCol = 1 To 18
        For DataRow = 16 To 25
            ExcelSheet.Cells(DataRow + 8, DataCol + 2).Value = ChnVal(DataRow-15, DataCol)
        Next
    Next

    For DataCol = 1 To 10
        ExcelSheet.Cells(DataCol + 23, 21).Value = ChnVal(1, CNo("Asfalt T°1") + DataCol-1)
    Next

    For m = 1 to DuracionTiempo
        ExcelSheet.Cells(m + 23, 22).Value = ChnVal(m, CNo("Ambient_T°"))
        ExcelSheet.Cells(m + 23, 23).Value = ChnVal(m, CNo("Humidity"))
```



```
ExcelSheet.Cells(m + 23, 24).Value = ChnVal(m, CNo("Wind_velocity"))
ExcelSheet.Cells(m + 23, 25).Value = ChnVal(m, CNo("Wind_direccion"))

    Call CheckError
Next
End If

If Choix = 2 then
    ExcelSheet.Cells(2, 1).Value = Coche

    '----- datos DRY asphalt hot T° -----
    For DataCol = 1 To 18
        For DataRow = 24 To 33
            ExcelSheet.Cells(DataRow + 18, DataCol + 2).Value = ChnVal(DataRow-23, DataCol)
        Next
    Next
    For DataCol = 1 To 10
        ExcelSheet.Cells(DataCol + 41, 21).Value = ChnVal(1, CNo("Asfalt T°1") + DataCol-1)
    Next
    For m = 1 to DuracionTiempo
        ExcelSheet.Cells(m + 41, 22).Value = ChnVal(m, CNo("Ambient_T°"))
        ExcelSheet.Cells(m + 41, 23).Value = ChnVal(m, CNo("Humidity"))
        ExcelSheet.Cells(m + 41, 24).Value = ChnVal(m, CNo("Wind_velocity"))
        ExcelSheet.Cells(m + 41, 25).Value = ChnVal(m, CNo("Wind_direccion"))

        Call CheckError
    Next
End If

If Choix = 3 then
    ExcelSheet.Cells(2, 1).Value = Coche
    '----- datos WET asphalt cold T° -----
    For DataCol = 1 To 18
        For DataRow = 32 To 41
            ExcelSheet.Cells(DataRow + 28, DataCol + 2).Value = ChnVal(DataRow-31, DataCol)
        Next
    Next
    For DataCol = 1 To 10
        ExcelSheet.Cells(DataCol + 59, 21).Value = ChnVal(1, CNo("Asfalt T°1") + DataCol-1)
    Next
    For m = 1 to DuracionTiempo
        ExcelSheet.Cells(m + 59, 22).Value = ChnVal(m, CNo("Ambient_T°"))
        ExcelSheet.Cells(m + 59, 23).Value = ChnVal(m, CNo("Humidity"))
        ExcelSheet.Cells(m + 59, 24).Value = ChnVal(m, CNo("Wind_velocity"))
        ExcelSheet.Cells(m + 59, 25).Value = ChnVal(m, CNo("Wind_direccion"))

        Call CheckError
    Next
End If

If Choix = 4 then
    ExcelSheet.Cells(2, 1).Value = Coche
    '----- datos WET asphalt hot T° -----
    For DataCol = 1 To 18
        For DataRow = 40 To 49
            ExcelSheet.Cells(DataRow + 38, DataCol + 2).Value = ChnVal(DataRow-39, DataCol)
```



```
Next
Next
For DataCol = 1 To 10
    ExcelSheet.Cells(DataCol + 77 , 21).Value = ChnVal(1, CNo("Asfalt T°1") + DataCol-1)
Next
Next
For m=1 to DuracionTiempo
    ExcelSheet.Cells(m + 77, 22).Value = ChnVal(m, CNo("Ambient_T°"))
    ExcelSheet.Cells(m + 77, 23).Value = ChnVal(m, CNo("Humidity"))
    ExcelSheet.Cells(m + 77, 24).Value = ChnVal(m, CNo("Wind_velocity"))
    ExcelSheet.Cells(m + 77, 25).Value = ChnVal(m, CNo("Wind_direccion"))

    Call CheckError
Next
End If

' Switch on screen-updating.
Excel.ScreenUpdating = True

' Close Excel after a positive answer to the following request.
If MsgBox("Close Excel?", vbYesNo Or vbQuestion, "Confirm") = vbYes Then
    ' Set status of Excel-workbook to 'saved'
    ' No message box will appear during quit.
    ExcelSheet.Parent.Saved = True

    ' You have to close Excel explicitly in VBS.
    Excel.Quit
End If

' Clear object variables.
Set ExcelSheet = Nothing
Set Excel = Nothing

' Restore DIAdem-window.
Call WndShow("SHELL", "NORMAL")
'AutoDrvUser = "H:\GRUP\SIC\FRENS\5.MACROS & FORMATS\Benchmarking Feeling"
End Sub

' -----
' Name:      Graf PNCAP
'
' Purpose:   Hace los graficos temporales para el informe
'
' Parameters: None
' -----
Sub GrafPNCAP()

graphdrvuser = "D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2. Macro"
call GraphObjOpen(PicObj(1))
```





```
call GraphObjOpen(D2AxisXObj(D2AxisPairNo(1)))
```

```
D2ChnX(1) = 1  
D2ChnX(2) = 1  
D2ChnX(3) = 1  
D2ChnX(4) = 1  
D2ChnX(5) = 1  
D2ChnX(6) = 1  
D2ChnX(7) = 1  
D2ChnX(8) = 1
```

```
D2ChnY(1) = CNo("MC_press")  
D2ChnY(2) = CNo("FL_press")  
D2ChnY(3) = CNo("FR_press")  
D2ChnY(4) = CNo("RL_press")  
D2ChnY(5) = CNo("RR_press")  
D2ChnY(6) = CNo("Ped_eff")  
D2ChnY(7) = CNo("Vhc_spd")  
D2ChnY(8) = CNo("Vhc_dec")
```

```
call GraphObjClose(D2AxisXObj(D2AxisPairNo(1)))  
call GraphObjClose(PicObj(1))
```

```
Call Picupdate
```

```
NewFolder2 = PathFicheroActivo + "Graf\  
Call CreateFolder(NewFolder2)  
GraphDrvUser = NewFolder2  
T3 = NombreFicheroActivo & "_graf"  
Call PICSAVEAS(T3)  
Call Picupdate()  
EXBITSPERPIXELX  
= "#ExType:@/@/@ExBitsPerPixJPEG/@ExBitsPerPixTIF/@ExBitsPerPixBMP/@ExBitsPerPixRLE/@E  
xBitsPerPixPCX/@ExBitsPerPixPSD/@ExBitsPerPixPNG/@ExBitsPerPixTGA/@ExBitsPerPixEPS/@Ex  
BitsPerPixRAS/@ExBitsPerPixWPG/@ExBitsPerPixPCT"  
EXQUALITY = 75  
EXCOMPRESSTYPEX  
= "#ExType:@/@/@ExCompTypJPEG/@ExCompTypTIF/@ExCompTypBMP/@ExCompTypRLE/@E  
xCompTypPCX/@ExCompTypPSD/@ExCompTypPNG/@ExCompTypTGA/@ExCompTypEPS/@ExC  
ompTypRAS/@ExCompTypWPG/@ExCompTypPCT"  
EXPROGRESSIVE = 0  
Call PICEXPORT(T3,"WMF",1,768,1024) '...  
EXFILENAME,EXTYPE,EXUSERATIO,EXHEIGTH,EXWIDTH,EXBITSPERPIXELX,EXQUALITY,EXCO  
MPRESSTYPEX,EXPROGRESSIVE
```

```
End Sub
```

```
'-----  
' COPY FILE  
'-----
```

```
sub CopyFile()
```



```
Dim fso, MyFile
Set fso = CreateObject("Scripting.FileSystemObject")
fso.CopyFile "D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2.
Macro\PNCAP_toyota", "D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2.
Macro\PNCAP_toyota"

End sub

'-----
' Evolucion de la distancia
'-----

sub EvoDistancia()

    InitialSpd = R30

End sub

'-----
' DELETE FOLDER
'-----

Function DeleteFolder(fldr)

    Dim fso
    Set fso = CreateObject("Scripting.FileSystemObject")

    If (fso.FolderExists(fldr)) Then
        fso.DeleteFolder(fldr)
    End If

End Function

'-----
'-                copy and seleccion de las condiciones climaticas
'-----

Sub DoOLECommunicationMeteo(ByVal j)

    Dim DataCol    ' Data column
    Dim DataRow    ' Data row

    ' AutoDrvUser = "D:\uni\PFC\Projecte final de carrera\Benchmarking toyota\2. Macro"
    ' Switch off default error handling --> no error messages.
    On Error Resume Next
    Set fso = CreateObject("Scripting.FileSystemObject")
    ' Start Excel via OLE.
    ' Always a new instance of Excel will be created.

    Call CheckError
    FicheroMeteo = "H:\GRUP\SIC\99 MeteoXiC" + "\METEO_" + Fecha + ".xls"
    DiademExcelWorkbook2 = "METEO_" + Fecha + ".xls"
    Sheet1 = "METEO_" + Fecha
    fso.CopyFile FicheroMeteo, NewFolder
```



```
' fso.CopyFile "H:\GRUP\SIC\99 MeteoXiC\METEO_18-10-2006.xls", NewFolder
Set Excel = CreateObject("Excel.Application")
```

```
' Make Excel visible. Until now Excel was not visible.
Excel.Visible = True
```

```
' Maximize Excel-window.
Excel.WindowState = xlMaximized
```

```
' Minimize DIAdem.
Call WndShow("SHELL", "MINIMIZE")
' Open prepared DIAdem-Table in Excel.
Excel.Workbooks.Open(AutoDrvUser & DiademExcelWorkbook2)
```

```
' Set reference to Excel-sheet.
' With the help of this reference you can easily access the Excel-sheet.
Set ExcelSheet = Excel.Workbooks(DiademExcelWorkbook2).Sheets(Sheet1)
```

```
' Clear object variables.
'Set ExcelSheet = Nothing
' Set Excel = Nothing
```

```
i = 1
Do while i < 145
    If ExcelSheet.Cells(i, 2).Value = Horalnicial then
        LineaHoralnicial = i
    End If
    i = i + 1
Loop
```

```
j = 1
Do while j < 145
    If ExcelSheet.Cells(j, 2).Value = HoraFinal then
        LineaHoraFinal = j
    End If
    j = j + 1
Loop
```

```
' TempIni = ExcelSheet.Cells(i, 3).Value
' TempFin = ExcelSheet.Cells(10, 5).Value
```

```
If MsgBox("Close Excel?", vbYesNo Or vbQuestion, "Confirm") = vbYes Then
    ' Set status of Excel-workbook to 'saved'
    ' No message box will appear during quit.
    ExcelSheet.Parent.Saved = True
```

```
' You have to close Excel explicitly in VBS.
Excel.Quit
End If
```

```
' Restore DIAdem-window.
Call WndShow("SHELL", "NORMAL")
```

```
DuracionTiempo = LineaHoraFinal - LineaHoralnicial + 1
R4 = DuracionTiempo
```



```
k = 1
  For k = 1 to DuracionTiempo
    ChnVal(k,CNo("Ambient_T°")) = ExcelSheet.Cells(LineaHoralnicial + k-1, 3).Value
    ChnVal(k,CNo("Humidity")) = ExcelSheet.Cells(LineaHoralnicial + k-1, 4).Value
    ChnVal(k,CNo("Wind_velocity")) = ExcelSheet.Cells(LineaHoralnicial + k-1, 5).Value
    ChnVal(k,CNo("Wind_direccion")) = ExcelSheet.Cells(LineaHoralnicial + k-1, 6).Value
  Next

'AutoDrvUser = "D:\uni\PFC\Proyecto final de carrera\Benchmarking toyota\2. Macro"

End sub

'-----
' DESGLOCE DEL PATH COMPLETO
'-----

'Fichero contiene todo, es decir, path + nombre + extension

Sub DesglocePath(ByVal Fichero, ByRef NombreFichero, ByRef PathFichero, ByRef Extension)

  Dim fso
  Set fso = CreateObject("Scripting.FileSystemObject")
  NombreFichero = fso.GetBaseName(Fichero)
  Extension = fso.GetExtensionName(Fichero)'Falta el "."
  Extension = "." + Extension
  PathFichero = fso.GetParentFolderName(Fichero) 'contiene el path pero sin la barra (\) al final
  PathFichero = PathFichero + "\"
End Sub

'-----
' CREATE FOLDER
'-----

Function CreateFolder(flDr)

  Dim fso
  Set fso = CreateObject("Scripting.FileSystemObject")

  If fso.FolderExists(flDr) = 0 Then
    fso.CreateFolder(flDr)
  End If

End Function
```