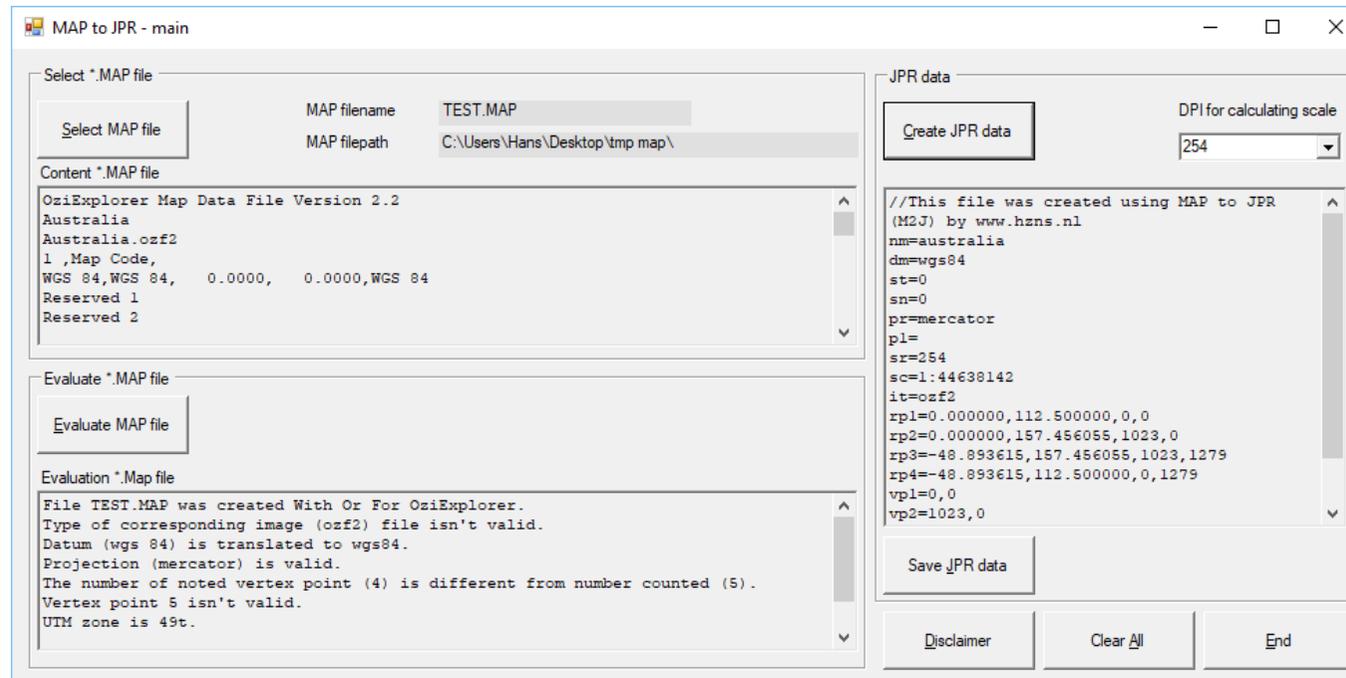


A tool to convert OziExplore MAP-file to Fugawi/Memory-Map JPR-file

Documentation MAP to JPR (M2J)

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Change log		
Version	Date	Remarks
0.1	June 29, 2019	Initial version

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Introduction

First I thought, there must be a simple tool to convert an OZI MAP-file to a Fugawi/ Memory-Map JPR-file. Both files use nearly the same information. There are some commercial options but I they aren't my piece of cake. The next option was to build a conversion tool myself. This page is the (continuing) story about my journey.

A simple conversion tool is more or less: "translate A in B" and that's it. Mostly it isn't that simple. A is not exactly the same as B or there isn't always a B or there isn't an A for every B or vice versa, etc., etc. The building of the tools will have four stages: collection information, extracting the information needed to build de tool (data structure, logical and real names of the variables), designing the conversion rules and last but not least the coding of the tool.

This document is an explanation, no more no less.

Information sources

To develop the tool I used the following sources:

- OziExplorer Website: OziExplorer HTML-manual (part about calibration), OziExplorer application (table contents).
- Fugawi Website: Manual about JPR-file
- Memory-Map Website: HTML-Manual (part about calibration)
- PathAway Website: Documentation
- Etopo website/Etopo maps: Examples of map with both MAP- and JPR-files

These five websites are about commercial products. It means that most of the information is hidden some ware with in the documentation, the application files of the application itself.

Data analyses

Structure JPR-file

The first step was to determine the target file (JPR) in terms of variables and aloud values.

Variable	Description	Variable type	Structure/aloud value(s)	Remarks/Relation with MAP-file
TFW data	First 6 Lines based on TFW (optional if reference			These data will not be used

	points provided).			
vr	jpr version number	Alphanumeric	\$\$\$	This variable will not be used
sc	Scale	Numeric, entered as the denominator	###	Related to line MM1B in MAP-file (meter per dot). If the JPR-variable sr (resolution) is selected, sc can be calculated. $sc = (sr/2,54) * 100 * MM1B)$
mc	Longitude at centre of map	Numeric	(-)###.##	This variable will not be used
pr	Projection	Alphanumeric:	UTM Mercator Lambert Conformal Conic Polyconic Transverse Mercator Equirectangular Cassini Finnish KKJ Finnish YKJ	Line 9 MAP-file
pp	Central Meridian if Lambert, Polyconic, Cassini and Transverse Mercator.	Numeric	(-)###.##	Line 40 MAP-file
p1	Latitude of origin if Lambert, Transverse Mercator and Cassini; mid-	Numeric	(-)###.##	Line 40 MAP-file

	latitude if Mercator			
p2	Scale factor if Transverse Mercator	Numeric	###.##	Line 40 MAP-file
p3	false northing if Transverse Mercator	Numeric	###	Line 40 MAP-file
p4	false easting if Transverse Mercator	Numeric	###	Line 40 MAP-file
p5	Standard Parallel 1 if Lambert	Numeric	(-)###.##	Line 40 MAP-file
p6	Standard Parallel 2 if Lambert	Numeric	(-)###.##	Line 40 MAP-file
Zn	Zone UTM number	Alphanumeric	##\$ ## = zone number \$ = t for the northern hemisphere and j for the southern hemisphere.	Line 10 to 39 MAP-file
dm	Datum	Alphanumeric	NAD27 NAD83 WGS84 Cape (South Africa) Australian Geodetic 1966 Australian Geodetic 1984 European 1950 (Mean) European 1950 (Western) European 1950 (Cyprus) European 1950 (Egypt) European 1950 (England) European 1950 (Greece) European 1950 (Iran)	Line 5 MAP-file

			<p>European 1950 Sardinia European 1950 Sicily European 1950 (Malta) European 1950 (Norway Finland) European 1950 (Portugal Spain) Hjorsey 1955 (Iceland) Ireland 1965 Ord Surv of Gr Britain 1936 (Mean) Ord Surv of Gr Britain 1936 (England) Ord Surv of Gr Britain 1936 (Isle of Man) Ord Surv of Gr Britain 1936 (Scotland-Shetland) Ord Surv of Gr Britain 1936 (Wales) RT90 (Sweden) S42 South American 1969 (Mean) South American 1969 (Argentina) South American 1969 (Bolivia) South American 1969 (Brazil) South American 1969 (Chile) South American 1969 (Columbia) South American 1969 (Ecuador) South American 1969 (Baltra-Galapagos) South American 1969 (Guyana) South American 1969 (Paraguay) South American 1969 (Peru) South American 1969 (Trinidad-Tobago) South American 1969 (Venezuela) Geodetic Datum 1949</p>	
st	Latitude datum shift in degrees	Numeric	(-)###.## Don't use minutes and seconds	Line 5 MAP-file

Sn	Longitude datum shift in degrees	Numeric	(-)###.## Don't use minutes and seconds	Line 5 MAP-file
un	units for grid in lines 5 and 6 of TFW portion of file		meters (default value if un = line missing) feet	These data will not be used
cr	Copyright statement	Alphanumeric	\$\$\$	These data will not be used
nm	Name of map	Alphanumeric	\$\$\$	Line 2 MAP-file
cu	Contour line or altitude units	Alphanumeric	Meters feet	Not available in MAP-file
ci	contour interval	Numeric	###.##	Not available in MAP-file
du	Dept Units	Alphanumeric:	Meters Feet fathoms	Not available in MAP-file
rp1 rpN	Reference point (latitude, longitude, x, y)	Numeric, numeric, numeric, numeric	(-)###.##, (-)###.##, ###, ### Latitude and longitude in degree, don't use minutes and seconds	Line 10 to 39 in MAP-file in case latitude and longitude are given. Alternative: Lines MMPXY and MMPLL in MAP-file
vp1 vpN	pixel of boundary vertex	Numeric, numeric	###, ###	Lines MMPXY in MAP-file
vg1 vgN	Latitude and longitude of boundary vertex	Numeric, numeric	(-)###.##, (-)###.## Latitude and longitude in degree, don't use minutes and seconds	Lines MMPLL in MAP-file
su	Data source	Alphanumeric	\$\$\$	These data will not be used
ed	Edition number	Numeric	###	These data will not be used
et	Edition date	Date	dd/mm/yyyy	These data will not be used

dt	Date of last correction to chart	Date	dd/mm/yyyy	These data will not be used
sr	scan resolution	Numeric in dots per inch	###, Most common: 72, 127, 150, 254, 300, 508, 600	Related to MM1B MAP-file and variable sc, must be selected
sk	skew angle in degrees	Numeric	(-)###.## Don't use minutes and seconds	These data will not be used
it	image type	Alphanumeric	gif tif jpg png bmp	Line 3, based file extension
Sd	datum for original scanned paper source	Date	dd/mm/yyyy	These data will not be used

Analysing difference between MAP- and JPR-file

From the table above we can learn that, on logical level, only one variable is missing, the resolution (DPI/JPR-variable sr) of the chart. This aspect must be addressed in the tool. Analyzing the aloud values for two variables need attention: the map datum (JPR-variable dm) and the map projection (JPR-variable pr). In Annex 1 is a comparison made between OziExplorer and Fugawi. There is a great discrepancy. In the first versions of the tool the map datum will be reduced to WGS 84, NAD 27 and NAD 83 and the projection to Mercator, Transverse Mercator, UTM and Lambert Conformal Conic, in a late stadium more datums and projections will be added.

Conversion rules

Every projection has its specific variables. For each projection there will be a set of rules.

UTM with WGS84/NAD27/NAD83

//comment	
nm=	Line 2 of MAP-file
dm=	Line 5, field 1
st=	Line 5, field probably 3, value mostly 0
sn=	Line 5, field probably 4, value mostly 0

pr=	Line 9, field 2, WGS84/NAD27/NAD83
zn=	mask ##\$; Line 10, field 14 and t for the northern hemisphere and j for the southern hemisphere
it=	Line 3, file extension
sr=	DPI, must be selected
sc=	To be calculated based on line MM1B of MAP-file and sr
rpN where N = 1 to max ∞	Mask ###.##, ###.##, ###, ### Option 1 (based on calibration data/N to max 30): Field 1: line PointNN, field Field 2: line PointNN, field Field 3: line PointNN, field 3 of MAP-file Field 4: line PointNN, field 4 of MAP-file Option 2 (based on contour data): Field 1: Line MMPLL, N, field 3 of MAP-file Field 2: Line MMPLL, N, field 4 of MAP-file Field 3: Line MMPXY, N, field 3 of MAP-file Field 4: Line MMPXY, N, field 4 of MAP-file
vpN where N = 1 to max ∞	Mask ###, ### Field 3: Line MMPXY, N, field 3 of MAP-file Field 4: Line MMPXY, N, field 4 of MAP-file
vgN where N = 1 to max ∞	Mask ###, ### Field 3: Line MMPLL, N, field 3 of MAP-file Field 4: Line MMPLL, N, field 4 of MAP-file

Mercator with WGS84/NAD27/NAD83

//comment	
nm=	Line 2 of MAP-file
dm=	Line 5, field 1
st=	Line 5, field probably 3, value mostly 0,
sn=	Line 5, field probably 4, value mostly 0
pr=	Line 9, field 2, WGS84/NAD27/NAD83
p1=	Line 5, Field 2
it=	Line 3, file extension

sr=	DPI, must be selected
sc=	To be calculated based on line MM1B of MAP-file and sr
rpN where N = 1 to max ∞	Mask ###.##, ###.##, ###, ### Option 1 (based on calibration data/N to max 30): Field 1: line PointNN, field Field 2: line PointNN, field Field 3: line PointNN, field 3 of MAP-file Field 4: line PointNN, field 4 of MAP-file Option 2 (based on contour data): Field 1: Line MMPLL, N, field 3 of MAP-file Field 2: Line MMPLL, N, field 4 of MAP-file Field 3: Line MMPXY, N, field 3 of MAP-file Field 4: Line MMPXY, N, field 4 of MAP-file
vpN where N = 1 to max ∞	Mask ###, ### Field 3: Line MMPXY, N, field 3 of MAP-file Field 4: Line MMPXY, N, field 4 of MAP-file
vgN where N = 1 to max ∞	Mask ###, ### Field 3: Line MMPLL, N, field 3 of MAP-file Field 4: Line MMPLL, N, field 4 of MAP-file

Transverse Mercator with WGS84/NAD27/NAD83

//comment	
nm=	Line 2 of MAP-file
dm=	Line 5, field 1
st=	Line 5, field probably 3, value mostly 0,
sn=	Line 5, field probably 4, value mostly 0
pr=	Line 9, field 2, WGS84/NAD27/NAD83
pp=	Line 40, field 3
p1=	Line 40, field 2
p2=	Line 40, field 4
p3=	Line 40, field 6
p4=	Line 40, field 5
it=	Line 3, file extension

sr=	DPI, must be selected
sc=	To be calculated based on line MM1B of MAP-file and sr
rpN where N = 1 to max ∞	Mask ###.##, ###.##, ###, ### Option 1 (based on calibration data/N to max 30): Field 1: line PointNN, field Field 2: line PointNN, field Field 3: line PointNN, field 3 of MAP-file Field 4: line PointNN, field 4 of MAP-file Option 2 (based on contour data): Field 1: Line MMPLL, N, field 3 of MAP-file Field 2: Line MMPLL, N, field 4 of MAP-file Field 3: Line MMPXY, N, field 3 of MAP-file Field 4: Line MMPXY, N, field 4 of MAP-file
vpN where N = 1 to max ∞	Mask ###, ### Field 3: Line MMPXY, N, field 3 of MAP-file Field 4: Line MMPXY, N, field 4 of MAP-file
vgN where N = 1 to max ∞	Mask ###, ### Field 3: Line MMPLL, N, field 3 of MAP-file Field 4: Line MMPLL, N, field 4 of MAP-file

Lambert Conformal Conic (LCC) with WGS84/NAD27/NAD83

//comment	
nm=	Line 2 of MAP-file
dm=	Line 5, field 1
st=	Line 5, field probably 3, value mostly 0,
sn=	Line 5, field probably 4, value mostly 0
zn=	mask ##\$; Line 10, field 14 and t for the northern hemisphere and j for the southern hemisphere
pr=	Line 9, field 2, WGS84/NAD27/NAD83
pp=	Line 40, field 3
p1=	Line 40, field 2
p5=	Line 40, field 7
p6=	Line 40, field 8
it=	Line 3, file extension

sr=	DPI, must be selected
sc=	To be calculated based on line MM1B of MAP-file and sr
rpN where N = 1 to max ∞	Mask ###.##, ###.##, ###, ### Option 1 (based on calibration data/N to max 30): Field 1: line PointNN, field Field 2: line PointNN, field Field 3: line PointNN, field 3 of MAP-file Field 4: line PointNN, field 4 of MAP-file Option 2 (based on contour data): Field 1: Line MMPLL, N, field 3 of MAP-file Field 2: Line MMPLL, N, field 4 of MAP-file Field 3: Line MMPXY, N, field 3 of MAP-file Field 4: Line MMPXY, N, field 4 of MAP-file
vpN where N = 1 to max ∞	Mask ###, ### Field 3: Line MMPXY, N, field 3 of MAP-file Field 4: Line MMPXY, N, field 4 of MAP-file
vgN where N = 1 to max ∞	Mask ###, ### Field 3: Line MMPLL, N, field 3 of MAP-file Field 4: Line MMPLL, N, field 4 of MAP-file

The coding

The tool is built with Visual Studio 2019 (Visual Basic). The conversion is split in four steps: selecting the OziExplorer MAP-file, evaluation of the MAP-data, “translating” MAP-data to JPR data and saving the JPR data in a JRP-file (same name and director, other extension). In Annex 2 (follows) you will find the code.

Annex 1: Map datum and Map projections

Oziexplorer (MAP-file)	=	Fugawi (JPR-file)
Datums		
Adindan		
Afgooye		
Ain el Abd 1970		
Anna 1 Astro 1965		
Arc 1950		
Arc 1960		
Ascension Island 1958		
Astro B4 Sorol Atoll		
Astro Beacon 1945		
Astro DOS 71/4		
Astronomic Stn 1952		
Australian Geodetic 1966	=	Australian Geodetic 1966
Australian Geodetic 1984	=	Australian Geodetic 1984
Australian Geocentric 1994 (GDA94)		
Austrian	?	Austria MGI 7 parameter
		Belgium 72
Bellevue (IGN)		
Bermuda 1957		
Bogota Observatory		
Campo Inchauspe	=	Campo Inchauspe (Argentina)
Canton Astro 1966		
Cape		Cape (South Africa) ?
Cape Canaveral		
Carthage		
CH-1903	=	CH 1903 7 parameter (Switzerland)
Chatham 1971		
Chua Astro		
Corrego Alegre		
Djakarta (Batavia)		

DOS		
Easter Island 1967		
Egypt		
ETRS89		
European 1950		
European 1950 (Mean France)		
European 1950 (Spain and Portugal)		
European 1979		
Everest 1956 (India and Nepal)		
Fiji Geodetic Datum 1986		
Finland Hayford	?	Finland 7 parameter
France RGF93		
Gandajika Base		
Geodetic Datum 1949	?	Geodetic Datum 1949 7 parameter (New Zealand)
Greece GGR87		
		GRS80
Guam 1963		
GUX 1 Astro		
Hartebeeshoek94		
Hermannskogel		
Hjorsey 1955	=	Hjorsey 1955 (Iceland)
Hong Kong 1963		
		Hungary EOV
Hu-Tzu-Shan		
Indian Bangladesh		
Indian Thailand		
		ING (France)
Israeli		
Ireland 1950		Ireland 1950 ?
		Ireland 1975 7 parameter
		Israel CS Grid
		Israel New ITM
ISTS 073 Astro 1969		

Johnston Island		
Kandawala		
Kerguelen Island		
Kertau 1948		
		Krovak (Czech Republic)
L.C. 5 Astro		
Liberia 1964		
Luzon Mindanao		
Luzon Philippines		
Mahe 1971		
Macro Astro		
Massawa		
Merchich		
		Michelin (France)
Midway Astro 1961		
NAD27 Alaska		
NAD27 Bahamas		
NAD27 Canada	=	North American 1927(Canada Mean)
NAD27 Canal Zone		
NAD27 Caribbean		
NAD27 Central		
NAD27 Conus		
NAD27 Cuba		
NAD27 Greenland		
NAD27 Mexico		
NAD27 San Salvador		
NAD83	=	North American 1983
Nahrwn Masirah IInd		
Nahrwn Sauydi Arbia		
Nahrwn United Arab		
Naparima BWI		
NGO1948		
NTF France		

Norsk		
NZGD1949		
NZGD2000		
Observatorio 1966		
Old Egyptian		
Old Hawaiian		
Oman		
Ord Surv Grt Britn	=	Ord Surv Gr Britain 1936 7 param
Pico De Las Nieves		
Pitcairn Astro 1967		
Potsdam Rauenberg DHDN		Potsdam (Germany)
Prov So Amrican 1956		
Prov So Chilean 1963		
Puerto Rico		
Pulkovo 1942 (1)		
Pulkovo 1942 (2)		
Quatar National		
Reunion		
Reykjavik 1900		
Rijksdriehoeksmeting	=	RD/ND Bessel (Netherlands)
Rome 1940		
RT 90		RT90 7 parameter (Sweden)
S42		S42
Santo (DOS)		
Sao Braz		
Sapper Hill 1943		
Schwarzeck		
Slovenia D48		
Spouth American 1969		
South Asia		
Southeast Base		
Southwest Base		
Timbalai 1948		

Tokyo		
Tristan Astro 1968		
Viti Levu 1916		
Wake-Eniwetok 1960		
WGS 72		
WGS 84	=	WGS84
Yacare		
Zanderij		
Projections		
Latitude/Longitude		
Mercator	=	Mercator
Transverse Mercator	=	Transverse Mercator
(UTM) Universal Transverse Mercator	=	(UTM) Universal Transverse Mercator
(BNG) British National Grid	?	UK Ordnance Survey
(IG) Irish Grid	?	Irish Map Grid equal
(NZG) New Zealand Grid		
(NZTM2) New Zealand TM 2000		
(SG) Swedish Grid	=	Swedish Grid
(SUI) Swiss Grid	=	Swiss Grid
(I) France Zone I		
(II) France Zone II		
(III) France Zone III		
(IV) France Zone IV		
Lambert Conformal Conic	=	Lambert
(A) Lambert Azimuthal Equal Area	=	Lambert Azimuthal Equal-Area Spherical
(EQC) Equidistant Conic		
Sinusoidal	=	Sinusoidal
Polyconic (American)	?	Polyconic
Albers Equal Area	=	Albers
Van Der Grinten		
Vertical Near-Sided Perspective		
(WIV) Wagner IV	=	Wagner IV

Bonne	=	Bonne
(PST) Polar Stereographic		
(MT0) Montana State Plane Zone 2500		
(ITA1) Italy Grid Zone 1		
(ITA2) Italy Grid Zone 2		
(VICMAP-TM) Victoria Aust.(pseudo AMG)		
(VICGRID) Victoria Australia		
(VG94) VICGRID94 Victoria Australia		

Annex 2: Visual Basic coding

The form

The form code

```
Partial Class M2Jmain
    Inherits System.Windows.Forms.Form

    'Form overrides dispose to clean up the component list.
    <System.Diagnostics.DebuggerNonUserCode()> _
    Protected Overrides Sub Dispose(ByVal disposing As Boolean)
        Try
            If disposing AndAlso components IsNot Nothing Then
                components.Dispose()
            End If
        Finally
            MyBase.Dispose(disposing)
        End Try
    End Sub
```

```

'Required by the Windows Form Designer
Private components As System.ComponentModel.IContainer

'NOTE: The following procedure is required by the Windows Form Designer
'It can be modified using the Windows Form Designer.
'Do not modify it using the code editor.
<System.Diagnostics.DebuggerStepThrough()> _
Private Sub InitializeComponent()
    Me.SelectFileButton = New System.Windows.Forms.Button()
    Me.MapFileSelectGroup = New System.Windows.Forms.GroupBox()
    Me.MapFileBox = New System.Windows.Forms.TextBox()
    Me.MapFilePathValue = New System.Windows.Forms.Label()
    Me.MapFileNameValue = New System.Windows.Forms.Label()
    Me.MapFilePathLabel = New System.Windows.Forms.Label()
    Me.MapFileBoxLabel = New System.Windows.Forms.Label()
    Me.MapFileNameLabel = New System.Windows.Forms.Label()
    Me.MapFileEvaluationGroup = New System.Windows.Forms.GroupBox()
    Me.MapEvaluationBox = New System.Windows.Forms.TextBox()
    Me.EvaluateLabel = New System.Windows.Forms.Label()
    Me.MapFileEvaluateButton = New System.Windows.Forms.Button()
    Me.JprDataGroup = New System.Windows.Forms.GroupBox()
    Me.SaveJprDataButton = New System.Windows.Forms.Button()
    Me.DpiLabel = New System.Windows.Forms.Label()
    Me.DpiBox = New System.Windows.Forms.ComboBox()
    Me.CreateJprDataButton = New System.Windows.Forms.Button()
    Me.JprDataBox = New System.Windows.Forms.TextBox()
    Me.ClearButton = New System.Windows.Forms.Button()
    Me.EndButton = New System.Windows.Forms.Button()
    Me.DisclaimButton = New System.Windows.Forms.Button()
    Me.MapFileSelectGroup.SuspendLayout()
    Me.MapFileEvaluationGroup.SuspendLayout()
    Me.JprDataGroup.SuspendLayout()
    Me.SuspendLayout()
    '
    'SelectFileButton
    '
    Me.SelectFileButton.Location = New System.Drawing.Point(6, 25)
    Me.SelectFileButton.Name = "SelectFileButton"
    Me.SelectFileButton.Size = New System.Drawing.Size(110, 42)
    Me.SelectFileButton.TabIndex = 0
    Me.SelectFileButton.Text = "&Select MAP file"
    Me.SelectFileButton.UseVisualStyleBackColor = True
    '
    'MapFileSelectGroup
    '
    Me.MapFileSelectGroup.Controls.Add(Me.MapFileBox)
    Me.MapFileSelectGroup.Controls.Add(Me.MapFilePathValue)
    Me.MapFileSelectGroup.Controls.Add(Me.MapFileNameValue)
    Me.MapFileSelectGroup.Controls.Add(Me.MapFilePathLabel)

```

```

Me.MapFileSelectGroup.Controls.Add(Me.MapFileBoxLabel)
Me.MapFileSelectGroup.Controls.Add(Me.MapFileNameLabel)
Me.MapFileSelectGroup.Controls.Add(Me.SelectFileButton)
Me.MapFileSelectGroup.Location = New System.Drawing.Point(12, 12)
Me.MapFileSelectGroup.Name = "MapFileSelectGroup"
Me.MapFileSelectGroup.Size = New System.Drawing.Size(607, 212)
Me.MapFileSelectGroup.TabIndex = 1
Me.MapFileSelectGroup.TabStop = False
Me.MapFileSelectGroup.Text = "Select *.MAP file"
'
'MapFileBox
'
Me.MapFileBox.Font = New System.Drawing.Font("Courier New", 8.25!, System.Drawing.FontStyle.Regular, System.Drawing.GraphicsUnit.Point,
CType(0, Byte))
Me.MapFileBox.Location = New System.Drawing.Point(6, 86)
Me.MapFileBox.Multiline = True
Me.MapFileBox.Name = "MapFileBox"
Me.MapFileBox.ReadOnly = True
Me.MapFileBox.ScrollBars = System.Windows.Forms.ScrollBars.Vertical
Me.MapFileBox.Size = New System.Drawing.Size(595, 116)
Me.MapFileBox.TabIndex = 1
'
'MapFilePathValue
'
Me.MapFilePathValue.BackColor = System.Drawing.Color.FromArgb(CType(CType(224, Byte), Integer), CType(CType(224, Byte), Integer),
CType(CType(224, Byte), Integer))
Me.MapFilePathValue.Location = New System.Drawing.Point(297, 48)
Me.MapFilePathValue.Name = "MapFilePathValue"
Me.MapFilePathValue.Size = New System.Drawing.Size(304, 18)
Me.MapFilePathValue.TabIndex = 4
'
'MapFileNameValue
'
Me.MapFileNameValue.BackColor = System.Drawing.Color.FromArgb(CType(CType(224, Byte), Integer), CType(CType(224, Byte), Integer),
CType(CType(224, Byte), Integer))
Me.MapFileNameValue.Location = New System.Drawing.Point(297, 25)
Me.MapFileNameValue.Name = "MapFileNameValue"
Me.MapFileNameValue.Size = New System.Drawing.Size(183, 18)
Me.MapFileNameValue.TabIndex = 3
'
'MapFilePathLabel
'
Me.MapFilePathLabel.AutoSize = True
Me.MapFilePathLabel.Location = New System.Drawing.Point(198, 48)
Me.MapFilePathLabel.Name = "MapFilePathLabel"
Me.MapFilePathLabel.RightToLeft = System.Windows.Forms.RightToLeft.Yes
Me.MapFilePathLabel.Size = New System.Drawing.Size(67, 13)
Me.MapFilePathLabel.TabIndex = 2
Me.MapFilePathLabel.Text = "MAP filepath"
'

```

```

'MapFileBoxLabel
,
Me.MapFileBoxLabel.AutoSize = True
Me.MapFileBoxLabel.Location = New System.Drawing.Point(6, 70)
Me.MapFileBoxLabel.Name = "MapFileBoxLabel"
Me.MapFileBoxLabel.Size = New System.Drawing.Size(93, 13)
Me.MapFileBoxLabel.TabIndex = 3
Me.MapFileBoxLabel.Text = "Content *.MAP file"
,
'MapFileNameLabel
,
Me.MapFileNameLabel.AutoSize = True
Me.MapFileNameLabel.Location = New System.Drawing.Point(198, 25)
Me.MapFileNameLabel.Name = "MapFileNameLabel"
Me.MapFileNameLabel.RightToLeft = System.Windows.Forms.RightToLeft.Yes
Me.MapFileNameLabel.Size = New System.Drawing.Size(72, 13)
Me.MapFileNameLabel.TabIndex = 1
Me.MapFileNameLabel.Text = "MAP filename"
,
'MapFileEvaluationGroup
,
Me.MapFileEvaluationGroup.Controls.Add(Me.MapEvaluationBox)
Me.MapFileEvaluationGroup.Controls.Add(Me.EvaluateLabel)
Me.MapFileEvaluationGroup.Controls.Add(Me.MapFileEvaluateButton)
Me.MapFileEvaluationGroup.Location = New System.Drawing.Point(12, 230)
Me.MapFileEvaluationGroup.Name = "MapFileEvaluationGroup"
Me.MapFileEvaluationGroup.Size = New System.Drawing.Size(607, 216)
Me.MapFileEvaluationGroup.TabIndex = 2
Me.MapFileEvaluationGroup.TabStop = False
Me.MapFileEvaluationGroup.Text = "Evaluate *.MAP file"
,
'MapEvaluationBox
,
Me.MapEvaluationBox.Font = New System.Drawing.Font("Courier New", 8.25!, System.Drawing.FontStyle.Regular,
System.Drawing.GraphicsUnit.Point, CType(0, Byte))
Me.MapEvaluationBox.Location = New System.Drawing.Point(6, 87)
Me.MapEvaluationBox.Multiline = True
Me.MapEvaluationBox.Name = "MapEvaluationBox"
Me.MapEvaluationBox.ReadOnly = True
Me.MapEvaluationBox.ScrollBars = System.Windows.Forms.ScrollBars.Vertical
Me.MapEvaluationBox.Size = New System.Drawing.Size(595, 116)
Me.MapEvaluationBox.TabIndex = 3
,
'EvaluateLabel
,
Me.EvaluateLabel.AutoSize = True
Me.EvaluateLabel.Location = New System.Drawing.Point(6, 71)
Me.EvaluateLabel.Name = "EvaluateLabel"
Me.EvaluateLabel.Size = New System.Drawing.Size(104, 13)
Me.EvaluateLabel.TabIndex = 5

```

```

Me.EvaluateLabel.Text = "Evaluation *.Map file"
'
'MapFileEvaluateButton
'
Me.MapFileEvaluateButton.Location = New System.Drawing.Point(6, 19)
Me.MapFileEvaluateButton.Name = "MapFileEvaluateButton"
Me.MapFileEvaluateButton.Size = New System.Drawing.Size(110, 42)
Me.MapFileEvaluateButton.TabIndex = 2
Me.MapFileEvaluateButton.Text = "&Evaluate MAP file"
Me.MapFileEvaluateButton.UseVisualStyleBackColor = True
'
'JprDataGroup
'
Me.JprDataGroup.Controls.Add(Me.SaveJprDataButton)
Me.JprDataGroup.Controls.Add(Me.DpiLabel)
Me.JprDataGroup.Controls.Add(Me.DpiBox)
Me.JprDataGroup.Controls.Add(Me.CreateJprDataButton)
Me.JprDataGroup.Controls.Add(Me.JprDataBox)
Me.JprDataGroup.Location = New System.Drawing.Point(625, 13)
Me.JprDataGroup.Name = "JprDataGroup"
Me.JprDataGroup.Size = New System.Drawing.Size(348, 385)
Me.JprDataGroup.TabIndex = 3
Me.JprDataGroup.TabStop = False
Me.JprDataGroup.Text = "JPR data"
'
'SaveJprDataButton
'
Me.SaveJprDataButton.Location = New System.Drawing.Point(6, 337)
Me.SaveJprDataButton.Name = "SaveJprDataButton"
Me.SaveJprDataButton.RightToLeft = System.Windows.Forms.RightToLeft.Yes
Me.SaveJprDataButton.Size = New System.Drawing.Size(110, 42)
Me.SaveJprDataButton.TabIndex = 7
Me.SaveJprDataButton.Text = "Save &JPR data"
Me.SaveJprDataButton.UseVisualStyleBackColor = True
'
'DpiLabel
'
Me.DpiLabel.AutoSize = True
Me.DpiLabel.Location = New System.Drawing.Point(217, 24)
Me.DpiLabel.Name = "DpiLabel"
Me.DpiLabel.Size = New System.Drawing.Size(122, 13)
Me.DpiLabel.TabIndex = 11
Me.DpiLabel.Text = "DPI for calculating scale"
'
'DpiBox
'
Me.DpiBox.FormattingEnabled = True
Me.DpiBox.Location = New System.Drawing.Point(220, 47)
Me.DpiBox.Name = "DpiBox"
Me.DpiBox.Size = New System.Drawing.Size(119, 21)

```

```

Me.DpiBox.TabIndex = 5
Me.DpiBox.Text = " "
'
'CreateJprDataButton
'
Me.CreateJprDataButton.Location = New System.Drawing.Point(6, 25)
Me.CreateJprDataButton.Name = "CreateJprDataButton"
Me.CreateJprDataButton.Size = New System.Drawing.Size(110, 42)
Me.CreateJprDataButton.TabIndex = 4
Me.CreateJprDataButton.Text = "&Create JPR data"
Me.CreateJprDataButton.UseVisualStyleBackColor = True
'
'JprDataBox
'
Me.JprDataBox.Font = New System.Drawing.Font("Courier New", 8.25!, System.Drawing.FontStyle.Regular, System.Drawing.GraphicsUnit.Point,
CType(0, Byte))
Me.JprDataBox.Location = New System.Drawing.Point(6, 86)
Me.JprDataBox.Multiline = True
Me.JprDataBox.Name = "JprDataBox"
Me.JprDataBox.ReadOnly = True
Me.JprDataBox.ScrollBars = System.Windows.Forms.ScrollBars.Vertical
Me.JprDataBox.Size = New System.Drawing.Size(336, 245)
Me.JprDataBox.TabIndex = 6
'
'ClearButton
'
Me.ClearButton.Location = New System.Drawing.Point(747, 404)
Me.ClearButton.Name = "ClearButton"
Me.ClearButton.Size = New System.Drawing.Size(110, 42)
Me.ClearButton.TabIndex = 9
Me.ClearButton.Text = "Clear &All"
Me.ClearButton.UseVisualStyleBackColor = True
'
'EndButton
'
Me.EndButton.Location = New System.Drawing.Point(863, 404)
Me.EndButton.Name = "EndButton"
Me.EndButton.Size = New System.Drawing.Size(110, 42)
Me.EndButton.TabIndex = 10
Me.EndButton.Text = "&End"
Me.EndButton.UseVisualStyleBackColor = True
'
'DisclaimButton
'
Me.DisclaimButton.Location = New System.Drawing.Point(631, 404)
Me.DisclaimButton.Name = "DisclaimButton"
Me.DisclaimButton.Size = New System.Drawing.Size(110, 42)
Me.DisclaimButton.TabIndex = 8
Me.DisclaimButton.Text = "&Disclaimer"
Me.DisclaimButton.UseVisualStyleBackColor = True

```

```

'
'M2Jmain
'
Me.AutoScaleDimensions = New System.Drawing.SizeF(6.0!, 13.0!)
Me.AutoScaleMode = System.Windows.Forms.AutoScaleModeMode.Font
Me.ClientSize = New System.Drawing.Size(982, 456)
Me.Controls.Add(Me.DisclaimButton)
Me.Controls.Add(Me.EndButton)
Me.Controls.Add(Me.ClearButton)
Me.Controls.Add(Me.JprDataGroup)
Me.Controls.Add(Me.MapFileEvaluationGroup)
Me.Controls.Add(Me.MapFileSelectGroup)
Me.Name = "M2Jmain"
Me.Text = "MAP to JPR - main"
Me.MapFileSelectGroup.ResumeLayout(False)
Me.MapFileSelectGroup.PerformLayout()
Me.MapFileEvaluationGroup.ResumeLayout(False)
Me.MapFileEvaluationGroup.PerformLayout()
Me.JprDataGroup.ResumeLayout(False)
Me.JprDataGroup.PerformLayout()
Me.ResumeLayout(False)

```

End Sub

```

Friend WithEvents SelectFileButton As Button
Friend WithEvents MapFileSelectGroup As GroupBox
Friend WithEvents MapFileNameLabel As Label
Friend WithEvents MapFilePathLabel As Label
Friend WithEvents MapFilePathValue As Label
Friend WithEvents MapFileNameValue As Label
Friend WithEvents MapFileEvaluationGroup As GroupBox
Friend WithEvents EvaluateLabel As Label
Friend WithEvents MapFileBoxLabel As Label
Friend WithEvents MapFileEvaluateButton As Button
Friend WithEvents MapFileBox As TextBox
Friend WithEvents MapEvaluationBox As TextBox
Friend WithEvents JprDataGroup As GroupBox
Friend WithEvents CreateJprDataButton As Button
Friend WithEvents JprDataBox As TextBox
Friend WithEvents DpiLabel As Label
Friend WithEvents DpiBox As ComboBox
Friend WithEvents ClearButton As Button
Friend WithEvents EndButton As Button
Friend WithEvents SaveJprDataButton As Button
Friend WithEvents DisclaimButton As Button

```

End Class

The code

```

Public Class M2Jmain
'Declarations
Structure JprStructure
    Public nm As String
    Public sc As Double
    Public sr As Double
    Public ds As Double
    Public it As String
    Public dm As String
    Public st As Double
    Public sn As Double
    Public pr As String
    Public zn As String
    Public pp As String
    Public p1 As String
    Public p2 As String
    Public p3 As String
    Public p4 As String
    Public p5 As String
    Public p6 As String
End Structure

Structure Coordinate
    Public x As Integer
    Public y As Integer
    Public lat As Double
    Public lon As Double
    Public Valid As Integer
End Structure

Public MapFileName, JprFileName, MapFilePath, ChartName As String
Public MapFileContent As String
Public JprData As JprStructure
Public UTM As Boolean
Public TM As Boolean
Public MERC As Boolean
Public LCC As Boolean
Public DirCurrent As String = ""
Public LineCounter As Integer
Public LineContent(100) As String
Public LineField(20) As String
Public RefPoint(3) As Coordinate
Public RefPointCounter As Integer
Public ValidRefPoints As Integer
Public VertexPoint(4) As Coordinate
Public VertexPointNoted As Integer
Public VertexPointLLCounter As Integer
Public VertexPointXYCounter As Integer
Public ValidVertexPoints As Integer
Public VertexMax As Integer

```

```

'-----
Public EndLine As String = Chr(13) + Chr(10)
'-----
Public Test As String = "TEST"

Private Sub M2Jmain_load(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles MyBase.Load
    'Visual effect in form
    CreateJprDataButton.Enabled = False
    SaveJprDataButton.Enabled = False
    MapFileEvaluateButton.Enabled = False

    'Loading DpiBox
    DpiBox.Items.Add("72")
    DpiBox.Items.Add("100")
    DpiBox.Items.Add("127")
    DpiBox.Items.Add("150")
    DpiBox.Items.Add("200")
    DpiBox.Items.Add("254")
    DpiBox.Items.Add("300")
    DpiBox.Items.Add("508")
    'Default setting
    DpiBox.Text = "254"

    'Declarations
    Dim TipText As New ToolTip()

    ' Setup the delays for the ToolTip (TipText).
    TipText.AutoPopDelay = 5000
    TipText.InitialDelay = 1000
    TipText.ReshowDelay = 500

    ' Force the ToolTip text to be displayed whether or not the form is active.
    TipText.ShowAlways = True

    ' Setup the TipText text
    TipText.SetToolTip(Me.SelectFileButton, "Select a MAP-file.")
    TipText.SetToolTip(Me.MapFileBox, "Content of the selected MAP-file.")
    TipText.SetToolTip(Me.MapFileEvaluateButton, "Evaluating the MAP-File, determening if teh file can be converted.")
    TipText.SetToolTip(Me.MapEvaluationBox, "Evaluation of the selected MAP-file.")
    TipText.SetToolTip(Me.CreateJprDataButton, "Create the content for the JPR-file.")
    TipText.SetToolTip(Me.DpiBox, "Select or change the resolution of the chart, 254 dpi (100 dot per cm) is the default.")
    TipText.SetToolTip(Me.JprDataBox, "Content for the JPR-file.")
    TipText.SetToolTip(Me.SaveJprDataButton, "Save the content to the JPR-file in the same directory as the MAP-File.")
    TipText.SetToolTip(Me.DisclaiMButton, "Disclaimer for the application MAP to JPR (M2J).")
    TipText.SetToolTip(Me.ClearButton, "Clear all data with in the applicatation.")
    TipText.SetToolTip(Me.EndButton, "close the application.")

End Sub

Private Sub SelectFileButton_Click(sender As Object, e As EventArgs) Handles SelectFileButton.Click

```

```

'Declarations
Dim FileNameLen, Pointer As Integer
Dim TempFileName As String
Dim MapFileContentLen, ChrPointer, LinePointer As Integer
Dim TxtChr As String = ""
Dim FindFile As New OpenFileDialog

'Clear the text in MapEvaluationBox
MapEvaluationBox.Text = ""

'Setting up dialog
FindFile.Filter = "Ozi-MAP file (*.map) | *.map"
FindFile.Multiselect = False
'Opening dialog
FindFile.ShowDialog()

'Retrieve value for MAPfile
TempFileName = FindFile.FileName

'Stopping subroutine (len TempfileNam = 0)
If Len(TempFileName) = 0 Then
    MsgBox("No file was selected!", 48, "Warning")
    Return
End If

'Retrieve value for MapFileName and MapPath
FileNameLen = Len(TempFileName)
For Pointer = FileNameLen To 0 Step -1
    If Mid(TempFileName, Pointer, 1) = "\" Then
        MapFilePath = Mid(TempFileName, 1, Pointer)
        MapFileName = Mid(TempFileName, Pointer + 1, FileNameLen - Pointer)
        Exit For
    End If
Next Pointer

'Retrieve value for ChartName and JprFileName
FileNameLen = Len(MapFileName)
For Pointer = FileNameLen To 0 Step -1
    If Mid(MapFileName, Pointer, 1) = "." Then
        ChartName = Mid(MapFileName, 1, Pointer - 1)
        JprFileName = ChartName + ".jpr"
        Exit For
    End If
Next Pointer

'Showing MapFileName and MapFilePath on screen
MapFileNameValue.Text = MapFileName
MapFilePathValue.Text = MapFilePath

'Enabling MapFileEvaluateButton

```

```

MapFileEvaluateButton.Enabled = True

'Loading text of MapFile
MapFileContent = My.Computer.FileSystem.ReadAllText(MapFilePath + MapFileName)

'Loading MapFileBox
MapFileBox.Text = MapFileContent

'Breaking MapFileContent into Lines (in array LineContent)
'- Determening number of lines (LineCounter)
MapFileContentLen = Len(MapFileContent)
LineCounter = 1
For I = 1 To MapFileContentLen
    If Mid(MapFileContent, I, 1) = Chr(13) Then
        LineCounter = LineCounter + 1
    End If
Next
'- Retrieve lines and put them in array LineContent
ReDim LineContent(LineCounter)
ChrPointer = 1
LinePointer = 1
Do While LinePointer < LineCounter And ChrPointer < MapFileContentLen
    Do
        TxtChr = Mid(MapFileContent, ChrPointer, 1)
        If TxtChr <> Chr(13) And TxtChr <> Chr(10) Then
            LineContent(LinePointer) = LineContent(LinePointer) + TxtChr
        End If
        ChrPointer = ChrPointer + 1
    Loop Until TxtChr = Chr(13) Or TxtChr = Chr(10)
    If TxtChr = Chr(13) Then LinePointer = LinePointer + 1
Loop

End Sub

Private Sub EndButton_Click(sender As Object, e As EventArgs) Handles EndButton.Click
    'Unloading and closing application
    Me.Close()
End Sub

Private Sub MapFileEvaluateButton_Click(sender As Object, e As EventArgs) Handles MapFileEvaluateButton.Click
    'Declarations
    Dim TmpPointer As Integer
    Dim LinePointer As Integer

    'Checking several aspects of Map file and, if possible/necessary, retrieving JprData

    'Retrieving map name
    JprData.nm = LCase(Trim(LineContent(2)))

    'Checking if it was as OziExplorer file

```

```

If Mid(LineContent(1), 1, 11) = "OziExplorer" Then
    MapEvaluationBox.Text = "File " & MapFileName & " was created With Or For OziExplorer." & EndLine
Else
    MapEvaluationBox.Text = "File " & MapFileName & " wasn't created with or for OziExplorer." & EndLine
End If

'Checking File format of map image by extention in line 3
If Len(LineContent(3)) = 0 Then
    MapEvaluationBox.Text = MapEvaluationBox.Text & MapFileName & " file isn't linked to a image file." & EndLine
Else
    For TmpPointer = Len(LineContent(3)) To 0 Step -1
        If Mid(LineContent(3), TmpPointer, 1) = "." Then
            JprData.it = LCase(Mid(LineContent(3), TmpPointer + 1, Len(LineContent(3)) - 1))
            Exit For
        End If
    Next
    Select Case JprData.it
        Case "jpg", "png", "tif", "gif", "bmp"
            MapEvaluationBox.Text = MapEvaluationBox.Text & "Type of corresponding image (" & JprData.it & ") file is valid." & EndLine
        Case Else
            MapEvaluationBox.Text = MapEvaluationBox.Text & "Type of corresponding image (" & JprData.it & ") file isn't valid." &
EndLine
    End Select
End If

'Splitting line 5 into fields
Call SplitLine(LineContent(5))
JprData.dm = LCase(LineField(1))
JprData.st = LineField(3)
JprData.sn = LineField(4)
Select Case JprData.dm
    'evaluating and if neccesary translating (MAP > JPR)
    Case "wgs 84"
        MapEvaluationBox.Text = MapEvaluationBox.Text & "Datum (" & JprData.dm & ") is translated to wgs84." & EndLine
        JprData.dm = "wgs84"
    Case "nad83"
        MapEvaluationBox.Text = MapEvaluationBox.Text & "Datum (" & JprData.dm & ") is valid." & EndLine
    Case "nad27"
        MapEvaluationBox.Text = MapEvaluationBox.Text & "Datum (" & JprData.dm & ") is valid." & EndLine
    Case "nad27 canada"
        MapEvaluationBox.Text = MapEvaluationBox.Text & "Datum (" & JprData.dm & ") is translated to north american 1927 (canada mean)."
& EndLine
        JprData.dm = "north american 1927 (canada mean)"
    Case "nad27 conus"
        MapEvaluationBox.Text = MapEvaluationBox.Text & "Datum (" & JprData.dm & ") is translated to north american 1927 (continental
us)." & EndLine
        JprData.dm = "north american 1927 (continental us)"
    Case Else
        MapEvaluationBox.Text = MapEvaluationBox.Text & "Datum (" & JprData.dm & ") isn't valid for M2J." & EndLine
End Select

```

```

'Splitting line 9 into fields
Call SplitLine(LineContent(9))
JprData.pr = LCase(LineField(2))

Select Case JprData.pr
  'evaluating and if necessary translating (MAP > JPR) and writing to MapEvaluationBox
  Case "mercator"
    MapEvaluationBox.Text = MapEvaluationBox.Text & "Projection (" & JprData.pr & ") is valid." & EndLine
  Case "transverse mercator"
    MapEvaluationBox.Text = MapEvaluationBox.Text & "Projection (" & JprData.pr & ") is valid." & EndLine
  Case "(utm) universal transverse mercator"
    MapEvaluationBox.Text = MapEvaluationBox.Text & "Projection (" & JprData.pr & ") is translated to utm." & EndLine
    JprData.pr = "utm"
  Case "lambert conformal conic"
    MapEvaluationBox.Text = MapEvaluationBox.Text & "Projection (" & JprData.pr & ") is valid." & EndLine
  Case Else
    MapEvaluationBox.Text = MapEvaluationBox.Text & "Projection (" & JprData.pr & ") isn't valid or isn't supported by M2J." &
EndLine
End Select

'Splitting line 40 into fields and writing to JprData
Call SplitLine(LineContent(40))
JprData.pp = Trim(LineField(3))
JprData.p1 = Trim(LineField(2))
JprData.p2 = Trim(LineField(4))
JprData.p3 = Trim(LineField(6))
JprData.p4 = Trim(LineField(5))
JprData.p5 = Trim(LineField(7))
JprData.p6 = Trim(LineField(8))

'Resetting variables UTM, TM, MERC and LCC
UTM = True
TM = True
MERC = True
LCC = True

'Evaluation of projections
If JprData.pp = "" Then LCC = False : TM = False
If JprData.p1 = "" Then LCC = False : TM = False : MERC = False
If JprData.p2 = "" Then TM = False
If JprData.p3 = "" Then TM = False
If JprData.p4 = "" Then TM = False
If JprData.p5 = "" Then LCC = False
If JprData.p6 = "" Then LCC = False

'Writing to MapEvaluationBox
If JprData.pp = "transverse mercator" And TM = False Then
  MapEvaluationBox.Text = MapEvaluationBox.Text & "The data for a transverse mercator projection are incomplete." & EndLine
End If

```

```

If JprData.pp = "mercator" And MERC = False Then
    MapEvaluationBox.Text = MapEvaluationBox.Text & "The data for a mercator projection are incomplete." & EndLine
End If
If JprData.pp = "lambert conformal conic" And LCC = False Then
    MapEvaluationBox.Text = MapEvaluationBox.Text & "The data for a lambert conformal conic projection are incomplete." & EndLine
End If

'Determining number of reference points (RefPoint array)
RefPointCounter = 0
For LinePointer = 10 To 39
    Call SplitLine(LineContent(LinePointer))
    If Trim(LineField(3)) <> "" Then
        RefPointCounter = RefPointCounter + 1
    Else
        Exit For
    End If
Next

'Redempting/resetting RefPoint Array
ReDim RefPoint(RefPointCounter)
For TmpPointer = 1 To RefPointCounter
    RefPoint(TmpPointer).x = 0
    RefPoint(TmpPointer).y = 0
    RefPoint(TmpPointer).lat = 0
    RefPoint(TmpPointer).lon = 0
    RefPoint(TmpPointer).Valid = 1
Next

'Determining values for RefPoint array and number of valid RefPoints
ValidRefPoints = 0
For LinePointer = 10 To 9 + RefPointCounter
    Call SplitLine(LineContent(LinePointer))
    If Trim(LineField(7)) = "" Or Trim(LineField(10)) = "" Then
        RefPoint(LinePointer - 9).Valid = RefPoint(LinePointer - 9).lat * 2
    Else
        RefPoint(LinePointer - 9).x = Val(LineField(3))
        RefPoint(LinePointer - 9).y = Val(LineField(4))
        RefPoint(LinePointer - 9).lat = Val(LineField(7)) + Val(LineField(8)) / 60
        If Trim(LCase(LineField(9))) = "s" Then RefPoint(LinePointer - 9).lat = RefPoint(LinePointer - 9).lat * -1
        RefPoint(LinePointer - 9).lon = Val(LineField(10)) + Val(LineField(11)) / 60
        If Trim(LCase(LineField(12))) = "w" Then RefPoint(LinePointer - 9).lon = RefPoint(LinePointer - 9).lon * -1
        ValidRefPoints = ValidRefPoints + 1
    End If
Next

'Determining number of vertex points (VertexPoint array) noted and counted
'resetting variables
VertexPointNoted = 0
VertexPointLLCounter = 0
VertexPointXYCounter = 0

```

```

For LinePointer = 41 To LineCounter
    Call SplitLine(LineContent(LinePointer))
    Select Case LCase(LineField(1))
        Case "mmpnum"
            VertexPointNoted = Val(LineField(2))
        Case "mmp11"
            VertexPointLLCounter = VertexPointLLCounter + 1
        Case "mmpxy"
            VertexPointXYCounter = VertexPointXYCounter + 1
    End Select
Next

'Deteremening size of VertexPoint Array
VertexMax = VertexPointNoted
If VertexPointLLCounter > VertexMax Then VertexMax = VertexPointLLCounter
If VertexPointXYCounter > VertexMax Then VertexMax = VertexPointXYCounter
If VertexMax <> VertexPointNoted Then
    MapEvaluationBox.Text = MapEvaluationBox.Text & "The number of noted vertex point (" & VertexPointNoted & ") is different from number
counted (" & VertexMax & ")." & EndLine
End If
'Redementioning/resetting VertexPoint Array
ReDim VertexPoint(VertexMax)
For TmpPointer = 1 To VertexMax
    VertexPoint(TmpPointer).x = 0
    VertexPoint(TmpPointer).y = 0
    VertexPoint(TmpPointer).lat = 0
    VertexPoint(TmpPointer).lon = 0
    VertexPoint(TmpPointer).Valid = 1
Next

'Determening values for VertexPoint array and DotSize
For LinePointer = 41 To LineCounter
    Call SplitLine(LineContent(LinePointer))
    Select Case LCase(LineField(1))
        Case "mmp11"
            If Trim(LineField(3)) = "" Or Trim(LineField(4)) = "" Then
                VertexPoint(Val(LineField(2))).Valid = VertexPoint(Val(LineField(2))).Valid * 2
            Else
                VertexPoint(Val(LineField(2))).lon = Val(LineField(3))
                VertexPoint(Val(LineField(2))).lat = Val(LineField(4))
            End If
        Case "mmpxy"
            If Trim(LineField(3)) = "" Or Trim(LineField(4)) = "" Then
                VertexPoint(Val(LineField(2))).Valid = VertexPoint(Val(LineField(2))).Valid * 4
            Else
                VertexPoint(Val(LineField(2))).x = Val(LineField(3))
                VertexPoint(Val(LineField(2))).y = Val(LineField(4))
            End If
        Case "mmlb"
    End Select

```

```

        JprData.ds = Val(LineField(2))
    End Select
Next

ValidVertexPoints = 0
For TmpPointer = 1 To VertexMax
    If VertexPoint(TmpPointer).Valid > 1 Then
        MapEvaluationBox.Text = MapEvaluationBox.Text & "Vertex point " & TmpPointer & " isn't valid." & EndLine
    Else
        ValidVertexPoints = ValidVertexPoints + 1
    End If
Next

'Determening UTM zone

'Determening number (for UTM zone)
Call SplitLine(LineContent(10))
If Trim(LineField(14)) <> "" Then
    'Based on first reference point
    JprData.zn = Trim(LineField(14))
Else
    'Based on first vertex point
    JprData.zn = Int((VertexPoint(1).lon + 186) / 6)
    If JprData.zn < 1 Then JprData.zn = JprData.zn + 60
End If

'Determening north/south (for UTM zone)
If RefPoint(1).Valid = 1 Then
    'Based on longitude first reference pont
    If RefPoint(1).lat >= 0 Then
        JprData.zn = JprData.zn & "t"
    Else
        JprData.zn = JprData.zn & "j"
    End If
Else
    'Based on longitude first vertex pont
    If VertexPoint(1).lat >= 0 Then
        JprData.zn = JprData.zn & "t"
    Else
        JprData.zn = JprData.zn & "j"
    End If
End If
MapEvaluationBox.Text = MapEvaluationBox.Text & "UTM zone is " & JprData.zn & "." & EndLine

'Last line of evaluation
MapEvaluationBox.Text = MapEvaluationBox.Text & "-End-" & EndLine

'Enabling CreateJprDataButton
CreateJprDataButton.Enabled = True
End Sub

```

```

Private Sub ClearButton_Click(sender As Object, e As EventArgs) Handles ClearButton.Click
    'clearing all textboxes and disabling buttons
    JprDataBox.Clear()
    CreateJprDataButton.Enabled = False
    SaveJprDataButton.Enabled = False
    MapEvaluationBox.Clear()
    MapFileEvaluateButton.Enabled = False
    MapFileBox.Clear()
End Sub

Private Sub DisclaimButton_Click(sender As Object, e As EventArgs) Handles DisclaimButton.Click
    'Declarations
    Dim MsgText As String

    'Disclaimer message
    MsgText = "This application is provided 'As is'. The use of the application is on your own risk. " &
        "Direct or indirect damage by using this application is users responsibility, " &
        "not the application-builders. Redistribution by a third party (commercial of non-commercial) " &
        "is prohibit. Download the application direct from www.hzns.nl."
    MsgBox(MsgText, 48, "Disclaimer")

End Sub

Private Sub SaveJprDataButton_Click(sender As Object, e As EventArgs) Handles SaveJprDataButton.Click
    'Declarations
    Dim Answer As Integer

    'Checking for an existing file
    If My.Computer.FileSystem.FileExists(MapFilePath + JprFileName) = True Then
        Answer = MsgBox("JPR-file allready exists. Overwrite?", 292, "Warning")
        If Answer = 6 Then
            'Overwriting existing JPR-file if answer on MsgBox = Yes
            My.Computer.FileSystem.WriteAllText(MapFilePath + JprFileName, JprDataBox.Text, False)
        End If
    Else
        'Creating JPR-file
        My.Computer.FileSystem.WriteAllText(MapFilePath + JprFileName, JprDataBox.Text, False)
    End If
End Sub

Private Sub CreateJprDataButton_Click(sender As Object, e As EventArgs) Handles CreateJprDataButton.Click
    'Declarations
    Dim TmpPointer1, TmpPointer2 As Integer
    Dim TmpTxt As String
    Dim TmpLat, TmpLon As String

    'Filling Textbox line by line
    JprDataBox.Text = "//This file was created using MAP to JPR (M2J) by www.hzns.nl" & EndLine
    JprDataBox.Text = JprDataBox.Text & "nm=" & JprData.nm & EndLine

```

```

JprDataBox.Text = JprDataBox.Text & "dm=" & JprData.dm & EndLine
JprDataBox.Text = JprDataBox.Text & "st=" & JprData.st & EndLine
JprDataBox.Text = JprDataBox.Text & "sn=" & JprData.sn & EndLine
JprDataBox.Text = JprDataBox.Text & "pr=" & JprData.pr & EndLine
'handling projection specific variables
Select Case JprData.pr
  Case "utm"
    JprDataBox.Text = JprDataBox.Text & "zn=" & JprData.zn & EndLine
  Case "mercator"
    JprDataBox.Text = JprDataBox.Text & "p1=" & JprData.p1 & EndLine
  Case "transverse mercator"
    JprDataBox.Text = JprDataBox.Text & "pp=" & JprData.pp & EndLine
    JprDataBox.Text = JprDataBox.Text & "p1=" & JprData.p1 & EndLine
    JprDataBox.Text = JprDataBox.Text & "p2=" & JprData.p2 & EndLine
    JprDataBox.Text = JprDataBox.Text & "p3=" & JprData.p3 & EndLine
    JprDataBox.Text = JprDataBox.Text & "p4=" & JprData.p4 & EndLine
  Case "lambert conformal conic"
    JprDataBox.Text = JprDataBox.Text & "pp=" & JprData.pp & EndLine
    JprDataBox.Text = JprDataBox.Text & "p1=" & JprData.p1 & EndLine
    JprDataBox.Text = JprDataBox.Text & "p5=" & JprData.p5 & EndLine
    JprDataBox.Text = JprDataBox.Text & "p6=" & JprData.p6 & EndLine
  Case Else
    JprDataBox.Text = JprDataBox.Text & "//This projection Is Not supported bij MAP To JPR, please check en edit 'p-data'" &
JprData.p6 & EndLine
    JprDataBox.Text = JprDataBox.Text & "pp=" & JprData.pp & EndLine
    JprDataBox.Text = JprDataBox.Text & "p1=" & JprData.p1 & EndLine
    JprDataBox.Text = JprDataBox.Text & "p2=" & JprData.p2 & EndLine
    JprDataBox.Text = JprDataBox.Text & "p3=" & JprData.p3 & EndLine
    JprDataBox.Text = JprDataBox.Text & "p4=" & JprData.p4 & EndLine
    JprDataBox.Text = JprDataBox.Text & "p5=" & JprData.p5 & EndLine
    JprDataBox.Text = JprDataBox.Text & "p6=" & JprData.p6 & EndLine
End Select
JprData.sr = Val(DpiBox.Text)
JprData.sc = Int((JprData.sr / 2.54) * 100 * JprData.ds)
JprDataBox.Text = JprDataBox.Text & "sr=" & JprData.sr & EndLine
JprDataBox.Text = JprDataBox.Text & "sc=1:" & JprData.sc & EndLine
JprDataBox.Text = JprDataBox.Text & "it=" & JprData.it & EndLine
'Handling reference points
TmpPointer2 = 1
If ValidRefPoints > 2 Then
  For TmpPointer1 = 1 To RefPointCounter
    If RefPoint(TmpPointer1).Valid = 1 Then
      TmpLat = CvtLatLon(RefPoint(TmpPointer1).lat)
      TmpLon = CvtLatLon(RefPoint(TmpPointer1).lon)
      TmpTxt = "rp" & TmpPointer2 & "=" & TmpLat & "," & TmpLon & "," & RefPoint(TmpPointer1).x & "," & RefPoint(TmpPointer1).y
      JprDataBox.Text = JprDataBox.Text & TmpTxt & EndLine
      TmpPointer2 = TmpPointer2 + 1
    End If
  Next
Else

```

```

        If ValidVertexPoints > 2 Then
            JprDataBox.Text = JprDataBox.Text & "//There aren't enough valid reference (3 or more) points available; using vertex points
instead." & EndLine
            For TmpPointer1 = 1 To VertexMax
                If VertexPoint(TmpPointer1).Valid = 1 Then
                    TmpLat = CvtLatLon(VertexPoint(TmpPointer1).lat)
                    TmpLon = CvtLatLon(VertexPoint(TmpPointer1).lon)
                    TmpTxt = "rp" & TmpPointer2 & "=" & TmpLat & "," & TmpLon & "," & VertexPoint(TmpPointer1).x & "," &
VertexPoint(TmpPointer1).y
                    JprDataBox.Text = JprDataBox.Text & TmpTxt & EndLine
                    TmpPointer2 = TmpPointer2 + 1
                End If
            Next
        Else
            JprDataBox.Text = JprDataBox.Text & "//There aren't enough valid reference (3 or more) and/or vertex (3 or more) points
available." & EndLine
        End If

    End If

    'Handling vertex points
    If ValidVertexPoints > 2 Then
        TmpPointer2 = 1
        For TmpPointer1 = 1 To VertexMax
            If VertexPoint(TmpPointer1).Valid = 1 Then
                TmpTxt = "vp" & TmpPointer2 & "=" & VertexPoint(TmpPointer1).x & "," & VertexPoint(TmpPointer1).y
                JprDataBox.Text = JprDataBox.Text & TmpTxt & EndLine
                TmpPointer2 = TmpPointer2 + 1
            End If
        Next
    Else
        JprDataBox.Text = JprDataBox.Text & "//There aren't enough valid vertex (3 or more) points available." & EndLine
    End If

    'Enabling Save button
    SaveJprDataButton.Enabled = True

End Sub

Private Sub SplitLine(LineTxt As String)
    'Sub splits a line with comma separated fields into max 20 fields

    'Declarations
    Dim FieldPointer, ChrPointer As Integer
    Dim TxtChr As String

    'Clear all information Array LineField
    For FieldPointer = 0 To 20
        LineField(FieldPointer) = ""
    Next

```

```

'Splitting line into fields
FieldPointer = 1
ChrPointer = 1
Do While ChrPointer <= Len(LineTxt)
    Do
        TxtChr = Mid(LineTxt, ChrPointer, 1)
        If TxtChr <> Chr(44) Then
            LineField(FieldPointer) = LineField(FieldPointer) + TxtChr
        End If
        ChrPointer = ChrPointer + 1
    Loop Until TxtChr = Chr(44) Or ChrPointer > Len(LineTxt)
    If TxtChr = Chr(44) Then FieldPointer = FieldPointer + 1
Loop
End Sub

```

```

Private Function CvtLatLon(LatLonValue As Double) As String
'Function Converts the numeric expression for a Latitude or Longitude into
'string expression with a dot (.) as a separator and max 6 decimals.
'A false/save construction

'Declarations
Dim TmpTxt1, TmpTxt2 As String
Dim ChrPointer As Integer
'Moving character by character from TmpTxt1 to TmpTxt2
'unless it is a comma (,). The comma will be replaced by a dot (.).
TmpTxt1 = Format(LatLonValue, "0.000000")
TmpTxt2 = ""
For ChrPointer = 1 To Len(TmpTxt1)
    If Mid(TmpTxt1, ChrPointer, 1) <> "," Then
        TmpTxt2 = TmpTxt2 + Mid(TmpTxt1, ChrPointer, 1)
    Else
        TmpTxt2 = TmpTxt2 + "."
    End If
Next
'Returning string to function and ending
Return TmpTxt2
End Function

```

```
End Class
```