

JPR file format Version 1.16

August 28, 2006

The JPR file format is designed to provide an easy way of providing geo-referencing information for a digital image. The most current version of this document will be available at

<http://www.fugawi.com/docs/jprdoc.pdf>

Send comments and corrections to support@fugawi.com

The file "imagename.jpr" provides geo-referencing image information for the file "imagename.xxx" where xxx is TIF, JPG, PNG, BMP or GIF.

The .jpr file is an ascii file with each line ending in <cr><lf>. Lines that are not used can be omitted, but the navigation program must have enough information to be able to geo-reference the image and assign the correct geodetic datum.

The first 6 lines of the file are the same as .tfw. They must reflect the x and y resolution and the grid coordinate of the NW corner of the IMAGE. If the image has not been rubber-sheeted to perfectly fit a grid, omit these lines and include at least three reference points. If these 6 lines are present, reference points are not required. If any of these 6 lines are present they ALL must be present.

If the image is distorted and/or the projection parameters are not known with certainty, include more than 20 reference points to get an accurate calibration.

If there is no collar on the map, the vertices of the bounding polygon are not required.

Latitude and longitude are in decimal degrees with negative in the Southern and Western hemispheres.

The letters are not case sensitive.

Pixel coordinates are measured from the top left corner of the image, starting at 0,0 for the NW corner pixel and measured as positive numbers.

The order of the lines does not matter, except for the first 6 lines.

Anything on a line following // will be considered a comment.

Additional datums and projections will be supported as required.

[File: jprdoc116.doc]

//SAMPLE FILE FOR COLLARLESS QUAD IN UTM PROJECTION:

2.4
0.000000
0.000000
-2.4
251456.662481
4765105.845115
vr=1.15
sc=24000
pr=UTM
zn=14t
dm=NAD27
un=meters
cr=(c) Acme Maps 2000
nm=Aspen, CO

//SAMPLE FILE FOR AERONAUTICAL CHART IN LAMBERT PROJECTION
//WITH NO COLLARS

vr=1.12
nm=Aspen, CO.
cu=feet
cr=(c) Acme Maps 2000
dm=WGS84
sc=500000
pr=Lambert Conformal Conic
pp=-106.00
p1=0
p5=34.0
p6=42.0
rp1=45.0,-110.0, 0, 0
rp2=45.0,-105.0, 3000, 0
rp3=40.0,-105.0, 3000, 2000
rp4=40.0,-110.0,0,2000
dt=31/12/2000

First 6 Lines based on TFW (optional if reference points provided). Usually used with maps rubber-sheeted to an exact UTM projection.

Line 1: x scaling

Example: 50.8

Line 2: rotation (always 0)

Example: 0

Line 3: translation (always 0)

Example: 0

Line 4: y scaling (negative)

Example: -50.8

Line 5: Easting of NW corner

Example: 457843.5

Line 6: Northing of NW corner

Example: 3587902.8

Example of first 6 lines:

2.4

0.000000

0.000000

-2.4

251456.662481

4765105.845115

vr=jpr version number

Example: vr=1.15

sc = scale (entered as the denominator)

Example: sc=24000

mc = longitude at center of map (use when map spans 180 degree meridian)

The map cannot extend more than 180 degrees in either direction from this value.

Default = 0

Example: mc=140

pr = projection

Supported values:

UTM
Mercator
Lambert Conformal Conic
Polyconic
Transverse Mercator
Equirectangular
Cassini
Finnish KKJ
Finnish YKJ

Example: pr=Lambert Conformal Conic

pp=Central Meridian (Lambert, Polyconic, Cassini and Transverse Mercator.)

Example: pp=-106.5

p1=Latitude of origin (Lambert, Transverse Mercator and Cassini, mid-latitude if Mercator)

Example: p1=0

p2=scale factor (Transverse Mercator)

Example: p2= .9996

p3= false northing (Transverse Mercator)

Example: p3=0

p4=false easting (Transverse Mercator)

Example: p4=500000

p5=Standard Parallel 1 (Lambert)

Example: p5=34.00

p6=Standard Parallel 2 (Lambert)

Example: p6=40.00

zn = zone UTM number and letter for zone. If the image spans more than one North-South zone or you do not know the north-south zone, use t in the northern hemisphere and j in the southern hemisphere. Other grid systems may not have a letter and may not have zones.

Example: zn=16t

dm = datum

Permitted values:

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)

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)

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

Example: dm=WGS84

st = latitude datum shift in degrees (shift = WGS84 – MapDatum)
The shift can be used to override the standard datum conversion.
Example: st=.00003

sn = longitude datum shift in degrees (shift=WG84 – MapDatum)
The shift can be used to override the standard datum conversion.
Example: sn=.000045

un = units for grid in lines 5 and 6 of TFW portion of file
Permitted values:
 meters (default value if un = line missing)
 feet
Example: un=meters

cr = copyright statement
Example: cr=(c)Acme Maps 2000

nm = name of map
Example: nm=Chicago

cu=contour line or altitude units
Permitted values:
 meters
 feet
Example: cu=meters

ci=contour interval
Number of meters or feet between contour lines. (Units determined in cu variable.)
Example: ci=1.5

du=depth units
Permitted values:
 meters
 feet
 fathoms
Example: du=meters

rpj= Reference point (latitude, longitude, x, y) where j = 1, ..3 ... Minimum of 3 required. There is no upper limit. Reference points are in the map datum.

Example: rp1=43.5, -106.25, 506, 3407
 rp2=43.5, -102.75, 2303, 3300
 rp3=41.25,-102.75, 2300, 3100

vpj=pixel of vertex of polygon defining the boundary of the useable map in x, y coordinates (not required if there is no border or collar for the map) where j = 1,..n. There must be 3 or more vertices. There is no upper limit. The vertices must be in order moving clockwise or counter-clockwise around the border of the map.

Example: vp1=506, 0
 vp2=2510, 34
 vp3=2500,2100
 vp4=490,2106

vgj=latitude and longitude of vertex of polygon defining the boundary of the useable map in lat,lon coordinates (not required if there is no border or collar for the map) where j = 1,..n. There must be 3 or more vertices. There is no upper limit. The vertices must be in order moving clockwise or counter-clockwise around the border of the map. Reference points are in map datum.

Example: vg1=28.75,-102.3333
 vg2=28.75,-102.0000
 vg3=28.50,-102.0000
 vg4=28.50,-102.3333

su=data source

Example: su=USGS

ed = edition number

Example: ed=23

et = edition date (dd/mm/yyyy)

Example: et=02/02/2001

dt=Date of last correction to chart (dd/mm/yyyy)

Example: dt=01/12/2000

sr = scan resolution of original image in Dots Per Inch

Example: sr=254

sk = skew angle in degrees (clockwise angle from left side of image to an intersecting line of longitude pointing north)

Example: sk=83.4

it = image type (gif, tif, jpg, png, bmp)

Example: it=png

sd=datum for original scanned paper source (may differ from datum for calibration dm=)