ips configuration file

[General]

```
# The interferometric processing system 'ips' can be run in two
# different modes. The main mode is DEM for the generation of digital elevation
# models. The DINSAR mode for differential interferometry is still under
# development.

mode = DEM

# This parameter looks for the location of the reference DEM file
# The reference DEM is used in various parts of the SAR interferometric
# processing flow, mostly prominently for the phase unwrapping.

reference dem = /export/apd/rgens/ips/dem/alaska_fixed.img

# The ips saves a large number of intermediate and final results.
# All the files relevant for further analysis will start with this basename

base name = delta

# The ips handles three different data types. The most flexible type
# is the level zero Sky Telemetry Format (STF). This swath data type allows for
# variable area sizes that are processed. The second data type is RAW for CEOS
# level zero data. The third supported data type is single look complex data(SLC)

data type = STF

# The deskew flag indicates whether the raw data is SAR processed in
# in zero Doppler geometry or not (1 for deskewing, 0 for regular processing)

deskew = 0

# For the SAR processing, two different schemes for chosing the
# Doppler values have been considered. Currently only the processing to the
# 'average' Doppler values of the image pair is used. The alternative approach
# that uses 'updated' Doppler values has not been implemented.

doppler = average

# For effectively using swath data the user can define latitude
# constraints to select a subset of the swath data (-99 indicates that no
# latitude constraint is chosen).

lat begin = 63.650
lat end = 64.250

# Matching up the first and last patches of an image pair leads to
# the best results. For this approach use the 'PATCH' option. Once this method
# fails you can use the 'FRAME' option to match up master and slave image in
# its entirety.

coregistration = PATCH

# This parameter defines the maximum allowed pixel offset in range
```

or azimuth after the initial co-registration has been performed. Three pixels
is an empirical value that worked in most cases.

maximum offset = 3

The default values file is used to define the user's preferred
parameter settings. In most cases, you will work on a study where your area
of interest is geographically well defined. You want the data for the entire
project in the same projection, with the same pixel spacing and the same
output format.
A sample of a default values file can be located in
/export/home/rgens/svnbuild/asf_tools//share/asf_tools/ips.

default values =

The test mode is for internal use only (1 for test mode on, 0 for
test mode off).

test mode = 0

The short configuration file flag allows the experienced user to
generate configuration files without the verbose comments that explain all
entries for the parameters in the configuration file (1 for a configuration
without comments, 0 for a configuration file with verbose comments)

short configuration file = 0

The general status field indicates the progress of the processing.
The status 'new' indicates that the configuration has only been initialized
but not run yet. For each new run the status needs to be set back to 'new'
before running a data set again. Once the processing starts the status changes
to 'processing'. When the processing is complete it is changed to 'success'

status = new

[Master image]

This parameter gives the path of the master image data.

path = /export/apd/rgens/ips/stf

This parameter gives the name of the master data file.
Swath data has usually an extension .000, whereas CEOS data has an extension
.D

data file = e1_23592.000

This parameter gives the name of the master metadata file.
Swath data has usually an extension .par, whereas CEOS data has an extension
.D

metadata file = e1_23592.000.par

[Slave image]

This parameter gives the path of the slave image data.

path = /export/apd/rgens/ips/stf

This parameter gives the name of the slave data file.
Swath data has usually an extension .000, whereas CEOS data has an extension
.D

data file = e2_3919.000

This parameter gives the name of the slave metadata file.
Swath data has usually an extension .par, whereas CEOS data has an extension
.D

metadata file = e2_3919.000.par

[Ingest]

This parameter defines the location of the precision state
vectors provided by the German Aerospace Center (DLR) for the master image

precise master =

This parameter defines the location of the precision state
vectors provided by the German Aerospace Center (DLR) for the slave image

precise slave =

This flag defines whether precision state vectors should be used
or not (1 for using precision state vectors, 0 for not using precision
state vectors). This funcionality is not fully implemented yet.

precise orbits = 0

The status field indicates the progress of the processing.
The status 'new' indicates that this processing step has not been
performed. When the processing is complete it is changed to 'success'
The processing flow can be interrupted by setting the status to 'stop'

status = new

[Doppler]

The status field indicates the progress of the processing.
The status 'new' indicates that this processing step has not been
performed. When the processing is complete it is changed to 'success'
The processing flow can be interrupted by setting the status to 'stop'

status = new

[Coregister first patch]

This parameter defines the number of patches that are used
during the co-registration of the upper part of the images. Ideally the
images correlate with one patch. At times, two patches might be required

patches = 1

This parameter indicates at which line number the processing
of the first patch of the master image is started. This can be changed
when the initial co-registration does not succeed.

start master = 0

This parameter indicates at which line number the processing
of the first patch of the slave image is started. This can be changed
when the initial co-registration does not succeed.

start slave = 0

This parameter determines the number of pixels that define the
grid that is used for the FFT match

grid = 20

This parameters defines whether a complex FFT is used for the
fine co-registration instead of the coherence (1 for complex FFT match,
0 for FFT match using coherence). Complex FFT matches usually lead to
better matching results.

fft = 1

This parameter indicates the pixel offset in azimuth direction
the matching algorithm determined.

offset azimuth = 0

This parameter indicates the pixel offset in range direction
the matching algorithm determined.

offset range = 0

The status field indicates the progress of the processing.
The status 'new' indicates that this processing step has not been
performed. When the processing is complete it is changed to 'success'
The processing flow can be interrupted by setting the status to 'stop'

status = new

[Coregister last patch]

This parameter defines the number of patches that are used
during the co-registration of the lower part of the images. Ideally the
images correlate with one patch. At times, two patches might be required

patches = 1

This parameter indicates at which line number the processing
of the last patch of the master image is started. This can be changed
when the initial co-registration does not succeed.

start master = 0

This parameter indicates at which line number the processing
of the last patch of the slave image is started. This can be changed
when the initial co-registration does not succeed.

start slave = 0

This parameter determines the number of pixels that define the
grid that is used for the FFT match

grid = 20

This parameters defines whether a complex FFT is used for the
fine co-registration instead of the coherence (1 for complex FFT match,
0 for FFT match using coherence). Complex FFT matches usually lead to
better matching results.

fft = 1

This parameter indicates the pixel offset in azimuth direction
the matching algorithm determined.

offset azimuth = 0

This parameter indicates the pixel offset in range direction
the matching algorithm determined.

offset range = 0

The status field indicates the progress of the processing.
The status 'new' indicates that this processing step has not been
performed. When the processing is complete it is changed to 'success'
The processing flow can be interrupted by setting the status to 'stop'

status = new

[ardop - Master image]

This parameter indicates the start offset determined by the
the first patch co-registration for the master image.

start offset = 0

This parameter indicates the end offset determined by the
the last patch co-registration for the master image.

end offset = 0

This parameter indicates how many patches of data have been
for the master image.

patches = 1

This flag defines whether a power image is created while
processing the master image (1 for generating a power image, 0 for not
generating a power image).

power flag = 1

This parameter defines the file name of the master power image.

power image = delta_a_pwr.img

The status field indicates the progress of the processing.
The status 'new' indicates that this processing step has not been
performed. When the processing is complete it is changed to 'success'
The processing flow can be interrupted by setting the status to 'stop'

status = new

[ardop - Slave image]

This parameter indicates the start offset determined by the
the first patch co-registration for the slave image.

start offset = 0

This parameter indicates the end offset determined by the
the last patch co-registration for the slave image.

end offset = 0

This parameter indicates how many patches of data have been
for the slave image.

patches = 1

This flag defines whether a power image is created while
processing the slave image (1 for generating a power image, 0 for not
generating a power image.

power flag = 1

This parameter defines the file name of the slave power image.

power image = delta_b_pwr.img

The status field indicates the progress of the processing.
The status 'new' indicates that this processing step has not been
performed. When the processing is complete it is changed to 'success'
The processing flow can be interrupted by setting the status to 'stop'

status = new

[Interferogram/coherence]

This parameter defines the file name of the interferogram

interferogram = delta_igram

This parameter defines the file name of the coherence image

coherence image = coh.img

The minimum coherence level defines the threshold for the
interferometric processing flow to interrupt the processing. In case the
average of an image pair is below this threshold the ips automatically
aborts any further processing. This way the low average coherence is used
as an indicator for co-registration problems.

minimum coherence = 0.3

This indicates whether a multilooked version of the interferogram
is stored (1 for generating a multilooked interferogram, 0 for not generating
one).

multilook = 1

The status field indicates the progress of the processing.
The status 'new' indicates that this processing step has not been
performed. When the processing is complete it is changed to 'success'
The processing flow can be interrupted by setting the status to 'stop'

status = new

[Offset matching]

Maximum pixel offset allowed during matching with reference
DEM.

max = 1.0

The status field indicates the progress of the processing.
The status 'new' indicates that this processing step has not been
performed. When the processing is complete it is changed to 'success'
The processing flow can be interrupted by setting the status to 'stop'

status = new

[Simulated phase]

Name of the file containing seed points used in the phase
unwrapping process. Seed points are selected on a regular grid and represent
points with minimum slope.

seeds = delta.seeds

The status field indicates the progress of the processing.
The status 'new' indicates that this processing step has not been
performed. When the processing is complete it is changed to 'success'
The processing flow can be interrupted by setting the status to 'stop'

status = new

[Deramp/multilook]

The status field indicates the progress of the processing.
The status 'new' indicates that this processing step has not been
performed. When the processing is complete it is changed to 'success'
The processing flow can be interrupted by setting the status to 'stop'

status = new

[Phase unwrapping]

Name of the phase unwrapping algorithm used.
Currently two phase unwrapping algorithms are supported. 'escher' is an
implementation of Goldstein's branch cut algorithm. 'snaphu' has been
developed and is distributed by Stanford University. It uses a minimum
cost flow network.

algorithm = escher

This parameters defines whether a topographic phase based on
an ellipsoidal approximation is subtracted from the phase before the
phase unwrapping

flattening = 1

This parameter sets the number of processors used for the
phase unwrapping (only valid for using 'snaphu').

processors = 8

This parameter defines the number of tiles in azimuth direction
used by the 'snaphu' phase unwrapping algorithm.

tiles azimuth = 0

This parameter defines the number of tiles in range direction
used by the 'snaphu' phase unwrapping algorithm.

tiles range = 0

Alternatively, the number of tiles used by 'snaphu' in azimuth
direction can defined per degree.

tiles per degree = 0

This parameter defines the overlap between tiles in azimuth
direction (only valid for using 'snaphu').

overlap azimuth = 400

This parameter defines the overlap between tiles in range
direction (only valid for using 'snaphu').

overlap range = 400

This parameter defines the weighting factor used for the
phase filtering (default value: 1.6).

filter = 1.6

Name of the quality control file generated when using the
snaphu phase unwrapping algorithm.

quality control = delta_qc.phase

The status field indicates the progress of the processing.
The status 'new' indicates that this processing step has not been
performed. When the processing is complete it is changed to 'success'
The processing flow can be interrupted by setting the status to 'stop'

status = new

[Baseline refinement]
Number of iterations used in the baseline refinement.

iterations = 0
This parameter defines the maxiumum number of iterations allowed
for the iterative determination of the interferometric baseline.

max iterations = 15

The status field indicates the progress of the processing.
The status 'new' indicates that this processing step has not been
performed. When the processing is complete it is changed to 'success'
The processing flow can be interrupted by setting the status to 'stop'

status = new

[Elevation]

File name of the elevation model in slant range.

dem = delta_ht.img

File name of the error map generated in slant range.

error map = delta_err_ht.img

The status field indicates the progress of the processing.
The status 'new' indicates that this processing step has not been
performed. When the processing is complete it is changed to 'success'
The processing flow can be interrupted by setting the status to 'stop'

status = new

[Ground range DEM]

The status field indicates the progress of the processing.
The status 'new' indicates that this processing step has not been
performed. When the processing is complete it is changed to 'success'
The processing flow can be interrupted by setting the status to 'stop'

status = new

[Geocoding]

File name of the geocoded digital elevation model.

dem = delta_dem

File name of the geocoded error map.

error map = delta_error

File name of the geocoded amplitude image.

amplitude = delta_amp

File name of the geocoded coherence image.

coherence = delta_coh

Name of the projection used for the geocoding.
There are currently five projections supported: UTM, Polar Stereographic,
Albers Conic Equal-Area, Lambert Conformal Conic and Lambert Azimuthal
Equal-Area projection.

projection name = utm

Name of the projection parameter file.

projection file = /export/home/rgens/svnbuild/asf_tools//share/asf_tools/projections/utm/utm.proj

Resampling method used for the geocoding of data.
Currently three resampling method are supported: nearest neighbor,
bilinear (default) and bicuc.

resampling method = bilinear

This parameter defines the pixel spacing for the geocoded
products.

pixel spacing = 20.0

The status field indicates the progress of the processing.
The status 'new' indicates that this processing step has not been
performed. When the processing is complete it is changed to 'success'
The processing flow can be interrupted by setting the status to 'stop'

status = new

[Export]

The name of the format all geocoded results are exported to.
For using the geocoded results in any commerical image processing and GIS
the 'geotiff' is the most reliable. For simple visualization 'jpeg' or
'tiff' do just fine.

format = geotiff

The status field indicates the progress of the processing.
The status 'new' indicates that this processing step has not been
performed. When the processing is complete it is changed to 'success'
The processing flow can be interrupted by setting the status to 'stop'

status = new