*Guidelines to prepare input files*

The folder “example image” contains the files described below:

1) a PRISMA L1 image in two files: (Prisma\_L1\_20200918\_HS.tiff, Prisma\_L1\_20200918\_PAN.tiff) which correspond to the HS and the PAN bands accordingly. The xy-size of the HS image is 1000x1000 px and the spatial resolution is 30 m. The xy-size of the PAN image is 6000x6000 px and the spatial resolution is 5 m. Thus, the ratio is 1/6. The wavelengths corresponding to the bands are attached in “wavelengths.txt”. These two files can be used during the training.

2) a small cropped area from the above files to be used during inference (Prisma\_L1\_20200918\_HScut.tif, Prisma\_L1\_20200918\_PANcut.tif. The xy-size of the HS image is 167x167 px and the spatial resolution is 30 m. The xy-size of the corresponding PAN image is 1000x1000 px and the spatial resolution is 5 m.

3) The pansharpened output file (PansharpenedL1\_20200918\_histogram\_clipping.tiff). Histogram clipping was performed during training and inference as described in the pre-processing steps in github.

Below I am writing the pre-processing steps required to prepare the input during training by using gdal commands in the command line:

**Input**

1. Convert Prisma\_L1\_20200918\_PAN.tiff to 30 m spatial resolution and size 1000x1000 (downsampling with 1/6 ratio).

gdal\_translate Prisma\_20200918\_PAN.tiff -ot UInt16 -of Gtiff -outsize 1000 1000 -r nearest Prisma\_20200918\_PANLR.tiff

2. Convert Prisma\_20200918\_HS.tiff to 180 m spatial resolution and size 167x167 (downsampling with 1/6 ratio).

gdal\_translate Prisma\_20200918\_HS.tiff -ot UInt16 -of Gtiff -outsize 167 167 -r nearest Prisma\_20200918\_HSLR.tiff

3. Convert Prisma\_20200918\_HSLR.tiff to 180 m spatial resolution and size 1000x1000 (upsampling with 1/6 ratio).

gdal\_translate Prisma\_20200918\_HSLR.tiff -ot UInt16 -of Gtiff -outsize 1000 1000 -r bilinear Prisma\_HS\_20200918\_cutLRUp.tiff

4. Merge Prisma\_HS\_20200918\_cutLRUp.tiff and Prisma\_20200918\_PANLR.tiff to create the input file during training.

gdal\_merge.py -o input\_training.tiff -of Gtiff -ot UInt16 -separate Prisma\_HS\_20200918\_cutLRUp.tiff Prisma\_20200918\_PANLR.tiff

**Output**

The output file during training is Prisma\_L1\_20200918\_HS.tiff

--------------------------------------------------------------------------

Below I am writing the pre-processing steps required to prepare the input during inference by using gdal commands in the command line:

1. Convert Prisma\_L1\_20200918\_HScut.tiff to 30 m spatial resolution and size 1000x1000 (upsampling with 1/6 ratio).

gdal\_translate Prisma\_20200918\_HScut.tif -ot UInt16 -of Gtiff -outsize 1000 1000 -r bilinear Prisma\_HS\_20200918\_cutUp.tif

2. Merge Prisma\_HS\_20200918\_cutUp.tif and Prisma\_L1\_20200918\_PANcut.tif to create the input file during inference.