

### Sample Solution - Mosaicking

#### Project Setup

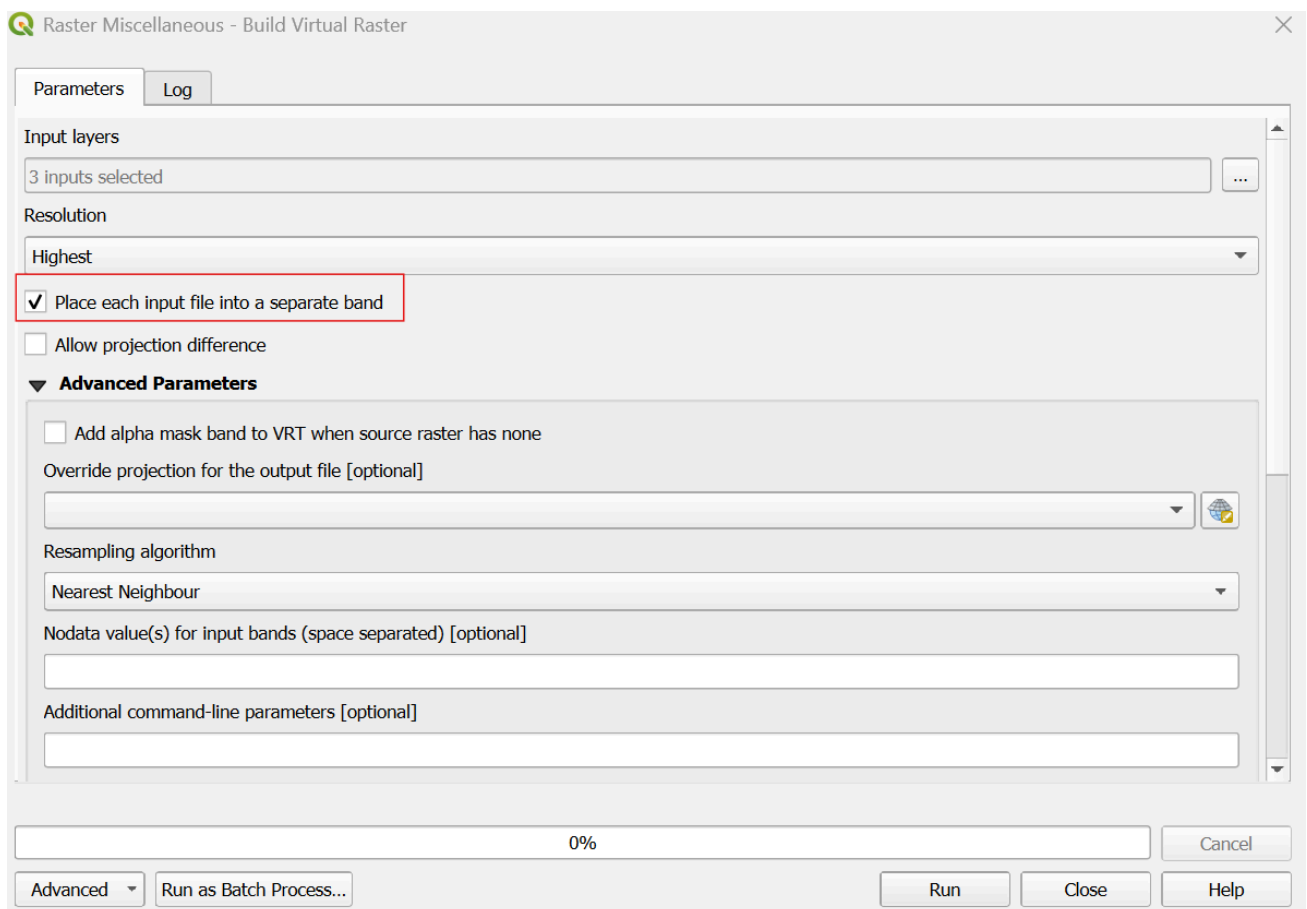
- Start your QGIS application and create a new project file.
- Get a background map using **Web -> QuickMapServices -> OSM -> OSM-Standard**.

#### Load Sentinel-2 Bands into QGIS

- Navigate to the Sentinel-2 folder (.SAFE), where you should select the following bands from this location: [your folder structure]\Mosaicking\_1\GRANULE\L2A\_T38KQD\_A002278\_20250211T071233\IMG\_DATA\R20m:
  - T38KQD\_20250211T071231\_B02\_20m -> **B02** (Blue)
  - T38KQD\_20250211T071231\_B03\_20m -> **B03** (Green)
  - T38KQD\_20250211T071231\_B04\_20m -> **B04** (Red)

#### Create a Virtual Raster

- Next, we can merge the 3 bands in one cohesive raster image by using the tool “create virtual raster” in the miscellaneous tab of the raster tools.
- Input the three bands and select “Highest” for resolution.
- Don’t forget to tick the box that ensures that all input layers will be treated as individual bands.



- Repeat this exact process from “**Load in Sentinel-2 Bands in QGIS**” for the second dataset **Mosaicking\_2**.

## Creating the Mosaic

- Finally, under raster, go to miscellaneous again and pick the merge tool
- Simply input the two layers you previously created.
- Set the output no\_data values to 0. Setting no\_data values to zero makes the dark borders disappear.
- Lastly, make sure to save the new file as a .tif with a name of your choice before you run the tool.

Raster Miscellaneous - Merge

Parameters Log

Input layers

2 inputs selected

☐ Grab pseudocolor table from first layer

☐ Place each input file into a separate band

Output data type

Float32

▼ Advanced Parameters

Input pixel value to treat as "nodata" [optional]

Not set

Assign specified "nodata" value to output [optional]

0,000000

Additional creation options [optional]

Profile

Name	Value
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0%

Cancel

Advanced Run as Batch Process... Run Close Help

# Sample Solution – Cloud Cover

## Project Setup

- Start your QGIS application and create a new project file.
- Get a background map using **Web -> QuickMapServices -> OSM -> OSM-Standard**.

## Load Sentinel-2 Bands into QGIS

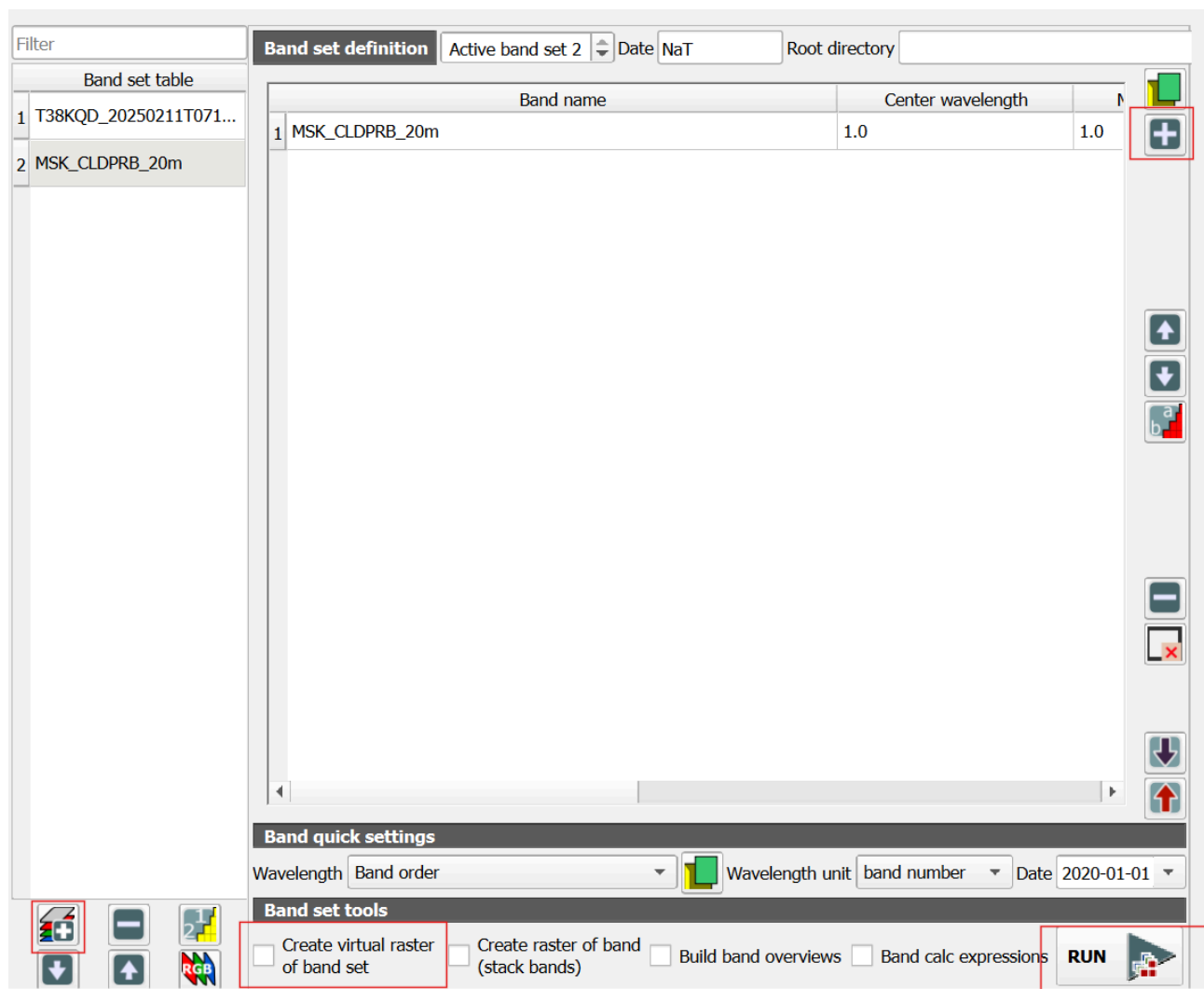
- First, there are two Raster datasets that we need to add to our QGIS Project: The raster layer that contains the cloud classification and the raster layer in which we want the cloud to be covered.
- Navigate to the Sentinel-2 folder (.SAFE)., where you should select the following bands from this location:
  1. [your folder structure] 8b Raster  
Preprocessing\CloudCover\GRANULE\L2A\_T38KQD\_A002278\_20250211T071233\IMG\_DATA\R20m and load in **T38KQD\_20250211T071231\_B03\_20m.jp2** -> Green Band
  2. [your folder structure] \8b Raster  
Preprocessing\CloudCover\GRANULE\L2A\_T38KQD\_A002278\_20250211T071233\QI\_DATA and load in **MSK\_CLDPRB\_20m.jp2** -> Cloud Mask Band
- For the first input, you could technically also choose any other band or a combination of multiple bands built as a virtual raster, as seen before in “**Create Virtual Raster**”

The two bands loaded in QGIS should look like this in your layer view:



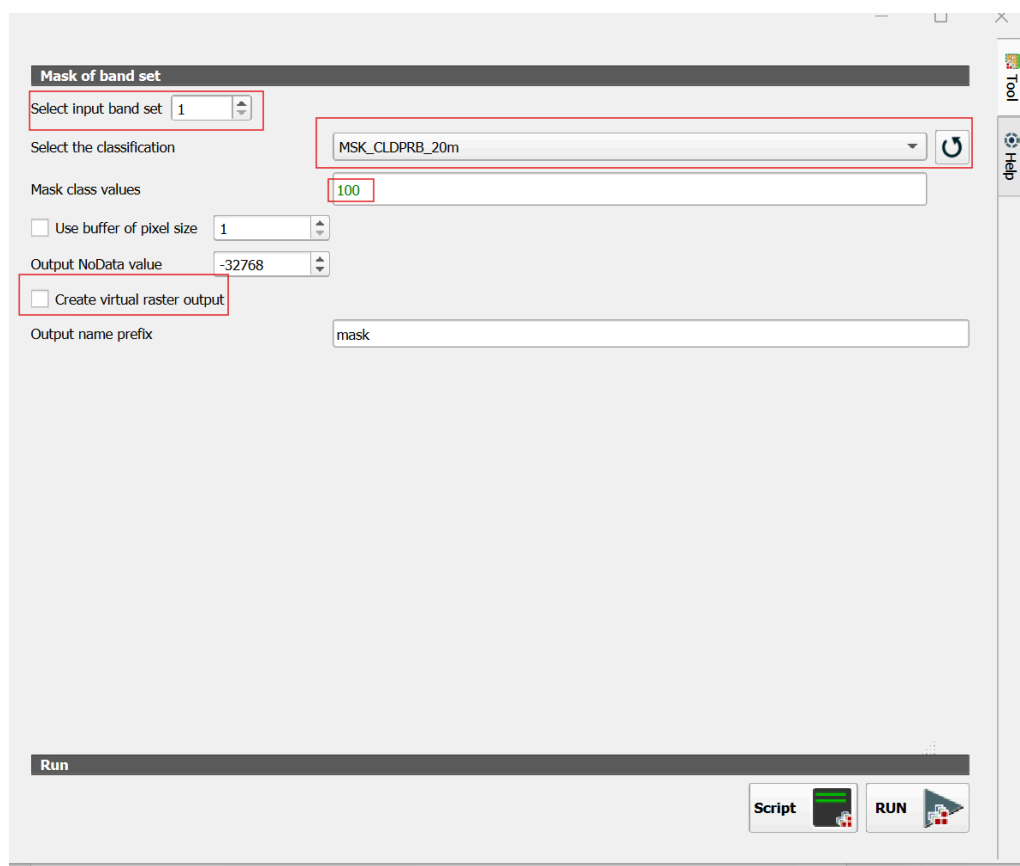
## Load Sentinel-2 Bands in the Band Set Tool for SCP

- Next, we need to go to the **Semi-Automatic Classification Plugin (SCP)** and **select the Band Set tool**.
- The SCP Plug-In can only use bands that have first been added via the Band Set Tool.
- In it, we can select to add bands from our folder:
  1. Add one of the Bands to a Band Set by clicking on the grey plus symbol in the upper right corner and selecting one of the bands.
  2. The selected band will show up in the main window. Now, you need to select “Create virtual raster of band set” at the bottom.
  3. Afterwards, you can run the tool and select any folder of your liking.
  4. To add a second band set for the remaining raster layer, click on the “Add a new band set” button in the bottom left (symbol with stacked layers and a plus sign).
  5. Repeat steps 1-3 for the second raster layer.
  6. In your band set table, two band sets with one raster layer each should now appear:



## Creating the Cloud Mask with the Masking Bands Tool

- The **Masking Bands** tool can be found under SCP -> Preprocessing -> Masking Bands.
- First, you will need to select the input band set. This is the band that the mask will be applied to; in our case, that's Band 3.
- For me, this raster layer was saved in band set 1, but it depends on the order in which you completed the last step, so be careful here.
- To select the classification, click on the refresh button on the right. Your MSK\_CLD raster should automatically be selected. This is the layer that contains the cloud data from which the mask will be created.
- For mask class values, choose 85-100 (based on inspection of your cloud mask layer using the identity tool).
- Select Create virtual raster output before running the tool and selecting a folder of your choice.



## Visually inspecting the result.

With an OSM map in the background, you should be able to see cloud-shaped holes in your raster like this:



