

Topic 5f - Practical Guide: How are data processed?

So, once you've downloaded your product from the portal, we need to start processing it with a piece of software. To do that, we will go and download the official European Space Agency toolbox called SNAP. Google SNAP toolbox and ESA, put that all into your search bar, and you will come up with a link that will point you to this website. If you follow the links to the download section, you will continue on and you can download the executable and installer for your platform. If you go ahead and instal that piece of software, you will have your SNAP toolbox ready to use.

And I've already done that so, here it is. This is the Sentinel-2 SNAP toolbox. It's nothing in there yet because I need to obviously give it the data. The way to open your dataset is to browse on your computer to the location of the downloaded datasets. Mine was just here.

If you extract that, it's a normal compressed file. Just double click it, use your favourite decompressing software. And you'll be created a folder. Just going to take you through the folder little bit. You saw the outline of this folder in the Information tab on the portal a second ago.

And you'll see lots of different folders in this. The interesting part-- well, actually the imagery is under the Granule folder, under one of these many things. And as soon as you click on image data, you will start having your imagery available. You can see there's 12, 13, nearly 13 bands available from this sensor.

These are the spectral bands which, again, you may have seen in the previous weeks that are being acquired by the Sentinel satellite. Typically, band 4 and 5 and 6 represent red, green, and blue. But more information about which band represents what is available in the central database.

To open the file that you've just downloaded, you can just click on Open product. In there, you will find a new menu into which you need to navigate to the folder that you've just decompressed, and select the Sentinel-2 XML file. Once you click Open, it will take a little time to load in that dataset. I've already got it in there, so I'm just going to cancel that. And up at the top left, you will start to see a file with lots of folders underneath.

These folders are interesting. You have a cloud mask in here somewhere. You have vector data which includes ground control points. The interesting part would be the bands. And here you can start seeing the 12 to 13 different bands that are available for you to inspect. Bands 4, 5, 6 as mentioned, are the normal red, green, blue bands. And if I open one up and zoom towards the area of interest, you can start to see it renders at full resolution that that band would.

But seeing it in black and white or a grey scale is not of great interest. So we were going to create a red, green, and blue composite of this. And to do that, it's a fairly simple right click on the top product and open RGB image window.

This will bring up the menus asking you to select which band corresponds to which colour. By default, it knows what to do. If you click OK again, it's going to take a little bit of time to process. So again, I've preempted it. I'll cancel that and this is the output of that process. The colours match what the earth should look like from above. And again, if I zoom into a little city town on the north coast of France, you'll start to see the quality of the Sentinel-2 data.