SAC Middle-East data exploration session - EUMETSAT Online Data Services

Practice S4 – Data Store Data Download and SIFT visualisation

Please try to follow and accomplish following steps for this scenario:

You want to study a Tropical Cyclone Tej and you need to download the radiance values from MSG SEVIRI 10.8 micrometre channel and want to create Natural Colour RGB over wider South Arabian Peninsula area in NetCDf format.

For more details on the data access services functionalities please consult following Data Store/Taylor user guide: https://user.eumetsat.int/resources/user-guides/introductory-data-store-user-guide

For description of SIFT visualisation tool please check this webinar recording:

https://training.eumetsat.int/course/view.php?id=478

Part 1 – data download

1- Open the Data Store (https://data.eumetsat.int/) and login using your credentials.

2- Search for 'High Rate SEVIRI Level 1.5 Image Data - MSG - Indian Ocean'

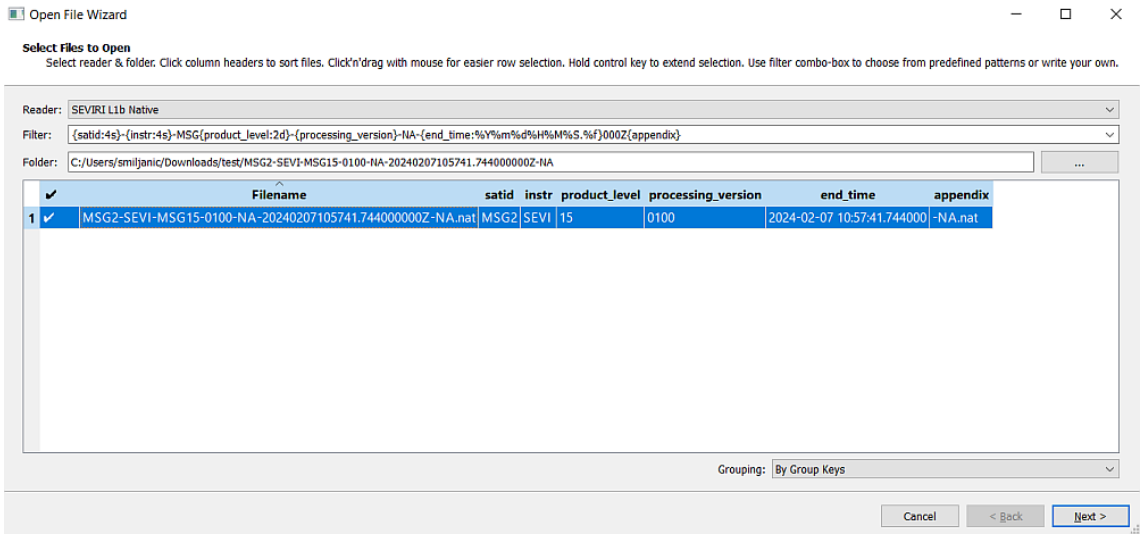
3- Go to Access Data and select a single time slot (2^{3rd} October 2023 at 12:15 UTC)

4- Download and extract (unzip) the output file to a separate folder

Part 2 – data visualisation

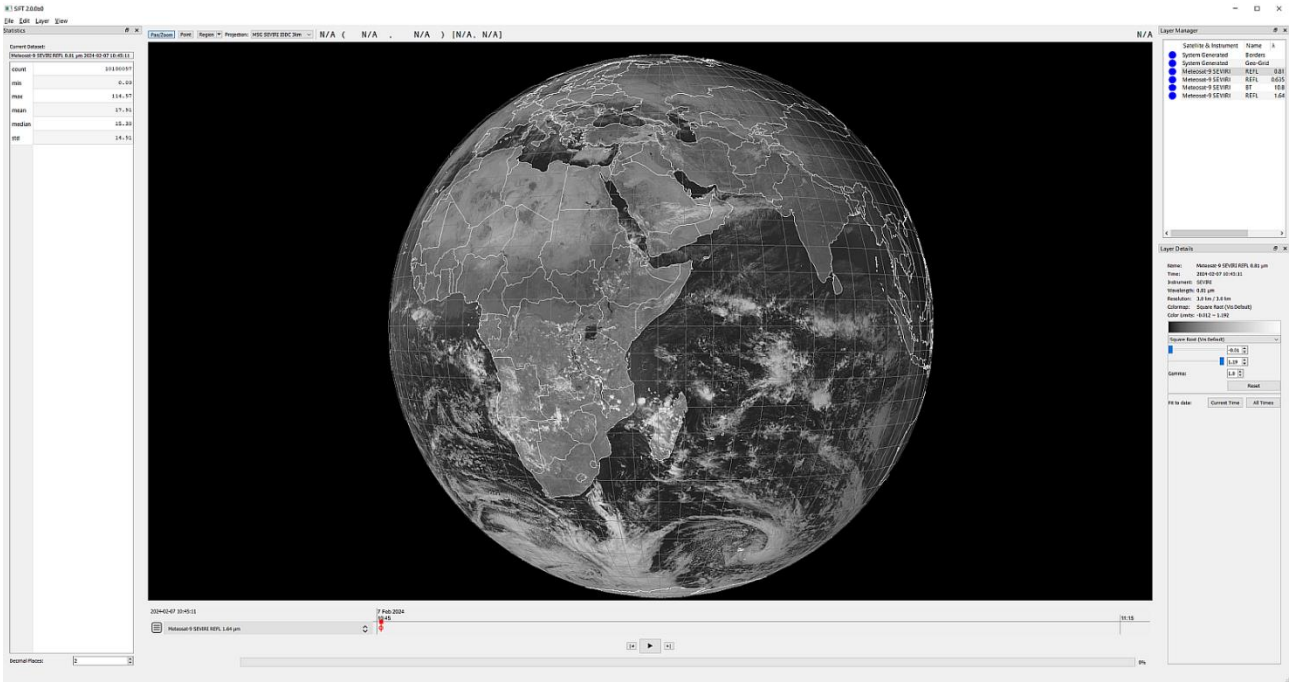
5- Display SEVIRI channels using SIFT visualisation tool

a. Open SIFT (run the **SIFT.bat** file in your 'SIFT_2.0.0b0' folder)
b. In the SIFT window, go to **File → Open File Wizard** (or press Ctrl+O)
    a. **Reader** – chose 'SEVIRI L1b Native'
    b. **Filter** – leave default
    c. **Folder** – browse to folder with previously downloaded and extracted SEVIRI data (in step 7-), select available time slot and click next (see below)



c. In the next window select from two calibration options for each selected channel (VIS0.6, VIS0.8, NIR1.6 and IR10.8) - choose **reflectance** for all solar channels (VIS and NIR) and **brightness_temperature** for IR channels. Click **Finish.**

d. In the upper menu (above the globe mask), under Projection choose 'MSG SEVIRI IODC 3km' (you should see following window):



e. Before start exploring the channels, please set the following colour schemes and reflectivity ranges for each channel - by selecting each in the **Layer Manager** window and setting up following in the **Layer Details** window (for IR channels set **Colormap** to **grays,** and **range** roughly to):
    a. For **VIS** channels: **0-100% reflectivity** (0.00 – 1.00), either by writing numbers or sliding the range with nodes
    b. For **NIR** channels: **0-50% reflectivity** (0.00 – 0.50)
    c. For **IR** channels: **200-320 K**

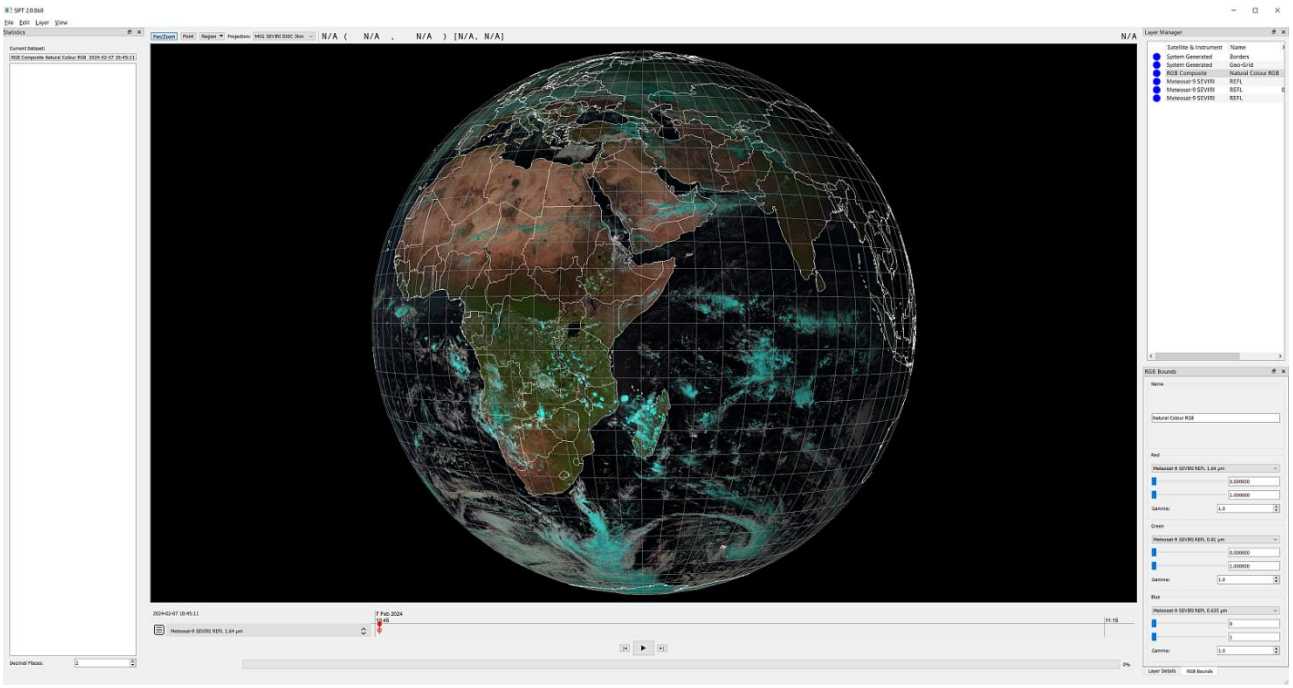
f. Now start to **explore the scene** by toggling between visible, near-IR and IR channels. **Left mouse click** is for moving around the full-disc view, **right-click** to sample the pixel values (reflectance or brightness temp., depending in general on selected channel). **Red dot** shows the pixel position, in the **upper ribbon** there is following info: **value** (**longitude latitude**) **channel**.

g. Where do you find coldest clouds around TC Tej? Do you see OT signature on top of cloud bands?

6- Create SEVIRI **Natural Colour RGB** (aka Day Land Cloud RGB) image

a. Now, let us create the **Natural Colour RGB** image: in the upper menu choose **Layer** -> **Create Composite** -> **RGB Bounds** window will open in the bottom right side of the screen**:**
    a. Change the **Name** to **Natural Colour RGB**
    b. For **Red** component choose: NIR1.6 channel, range: **0-100%** (0.00-1.00), Gamma: 1.0
    c. For **Green** component choose: VIS0.8 channel, range: **0-100%**, Gamma: 1.0
    d. For **Blue** component choose: VIS0.6 channel, range: **0-100%**, Gamma: 1.0

You should see similar RGB:



b. Can you discriminate now between ice and water clouds now easily?