# Geospatial Data Exploration Task for Remote Sensing Internship 2023

**Task**: Use a provided Sentinel-2 data cube with only raw bands, then post-process a new layer of NDVI to achieve a map and time series visualization

**Materials**:

- netCDF of data cube (linked here)
- Geojson of sub-AOI (linked here)

**Deliverables**:

1. A Jupyter notebook from start to finish, opening, exploring, visualizing, and modifying the geospatial data, specifically including the following:
    a. Calculation of the Normalized Difference Vegetation Index (NDVI) over the entire AOI for each date given in the data cube and added as a separate data layer in the same provided data cube
    b. A visual RGB image of one date
    c. Distribution (histogram) of NDVI pixels
    d. Time series of NDVI averaged over the AOI
2. A brief description of your interpretation of the spatial distribution and evolution of the NDVI/vegetation
3. A visualization of NDVI (colormap here) clipped to the provided sub-AOI

**Additional instructions**:

1. Development is to be done using Python. Any frameworks/libraries are accepted.
2. Any additional data exploration (i.e. not explicitly required for the deliverables) can be kept in the notebook if displayed in a clean and organized manner

**Submission:** Host your submission on a public github repository OR send the notebook file to recruitment@spacesense.ai

**Timeline**: Your deadline for this task is **14th March 2023, 23:59 CET**. Any submissions after this deadline will not be considered.