FPCUP Appathon: Copernicus Innovative Solutions

Using Satellite Data for Health Applications

This hackathon offers participants the freedom to choose their specific field of interest within the broader field of health applications. The objective is to create innovative products or applications such as Disease Prediction or Monitoring, Impact of Climate Change on Health, Early Warning Systems for Epidemic Diseases, and more, that leverage satellite data from CREODIAS and any other freely available data sources to contribute to the health domain.

Users are expected to use:

- Earth Observation (EO) Data from the CREODIAS (Copernicus DIAS - Copernicus Data and Information Access Service) platform. CREODIAS includes a plethora of EO data from various satellites.
- Any other open datasets of their choosing (open internet-based or private)

To create an Artificial Intelligence (AI) based application in the Public Health domain. Examples include but are not limited to:

- Disease Spread Prediction and/or Monitoring
- Understanding the factors of a disease spread
- Health Impact Assessment of Climate Change
- Early Warning Systems and Epidemiological Surveillance
- Air and/or Water Quality Assessment and Health Impacts

Information on Satellite Systems

Sentinel-1:
Spatial Resolution: Varies from 5 m to 40 m depending on the operational mode.
Revisit Time: Typically 6 to 12 days, but varies by location.

Sentinel-2:
Spatial Resolution: 10 m, 20 m, and 60 m for different spectral bands.
Revisit Time: Approximately 5 days.

Sentinel-3:
Spatial Resolution: Varies between instruments (e.g., OLCI has a resolution of 300 m for ocean color).
Revisit Time: Typically 1 to 2 days for most instruments.

Landsat Series (Landsat 8, Landsat 9):
Spatial Resolution: 15 m for panchromatic band, 30 m for visible and near-infrared bands.
Revisit Time: Approximately 16 days.

MODIS (Moderate Resolution Imaging Spectroradiometer):
Spatial Resolution: 250 m (for bands 1-2), 500 m (for bands 3-7), and 1000 m (for bands 8-36).
Revisit Time: Approximately 1 to 2 days at the equator.