



# ESA-JAXA Pre-Launch EarthCARE Science and Validation Workshop

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ESA Orbit and Swath Tools

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# Orbit & Swath Tools

## Overview

### Graphical Applications

#### ESOV

Earth Observation Swath and Orbit  
Visualization

#### SAMI

Satellite Missions 3D Visualization  
Software

### Command Line Tools

#### ZoneOverPass

Satellite / Instrument overpass times  
over region of interest or ground site

#### TrajectoryOverPass

Instrument overpass times over a  
given time-tagged trajectory



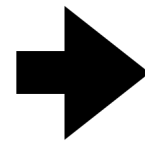
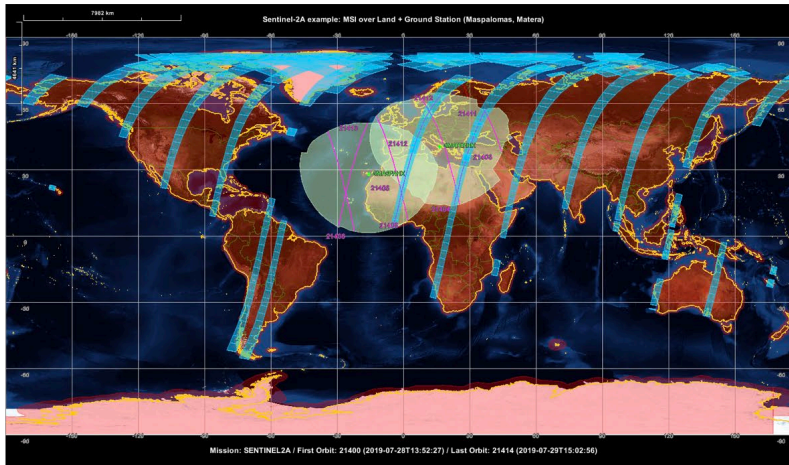
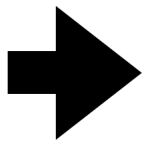
# ESOV Application

## Overview

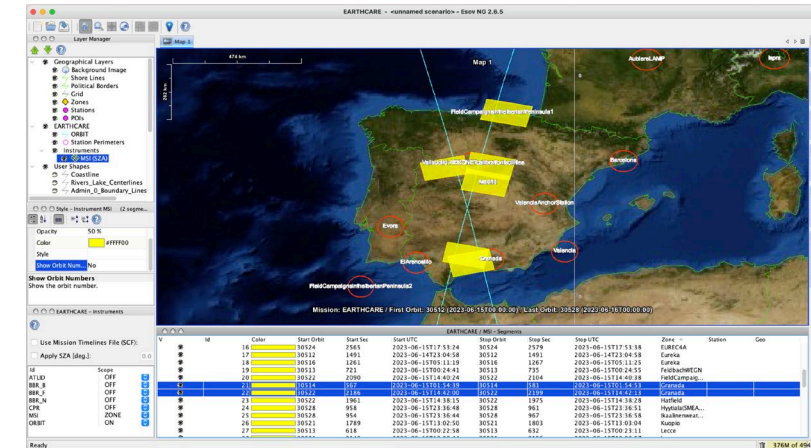
Application that allows the users to visualise satellite orbit and instrument swaths and calculate times of overpass over regions of interest for ESA Earth Observation missions, including EarthCARE

- Available for: Windows, macOS Intel and Linux (all 64-bit)

- Orbit
- Swath
- Zones
- Stations



- Time Segments
- Export Images



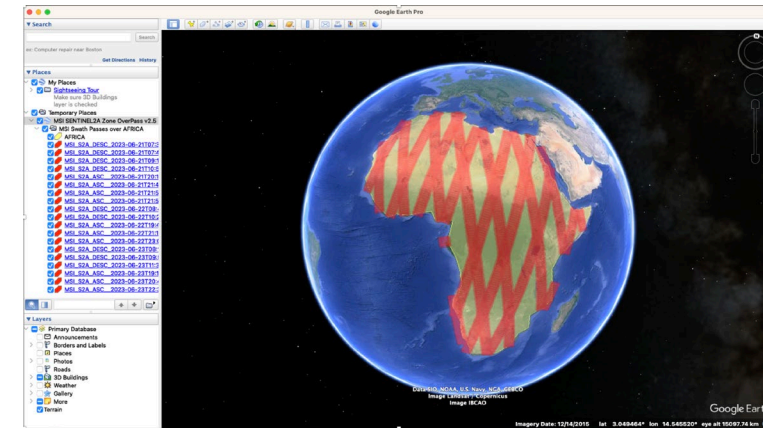


# ZoneOverPass Tool

## Overview

Command line executable that calculates the time when a satellite orbit ground-track or instrument swath passes over given region(s) or ground site(s) of interest.

- Available for: Windows, macOS and Linux (all 64-bit)



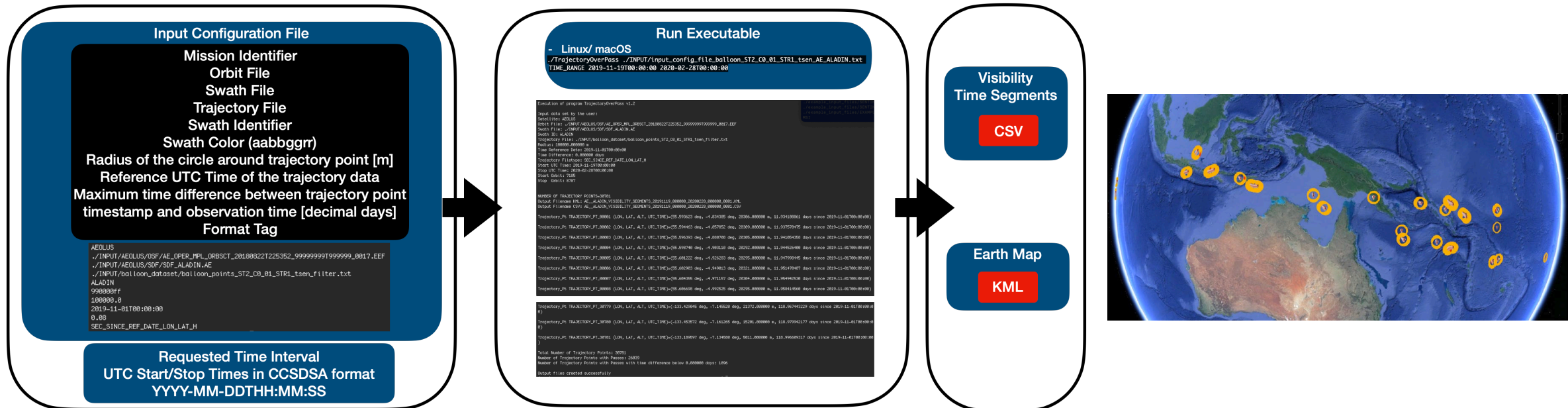


# TrajectoryOverPass Tool

## Overview

Command line executable that calculates the visibility passes of a given a satellite orbit ground-track or instrument swath over all trajectory positions. It is possible to exclude co-observations above a given time difference.

- Available for: macOS and Linux (all 64-bit), coming soon in Windows (64-bit)



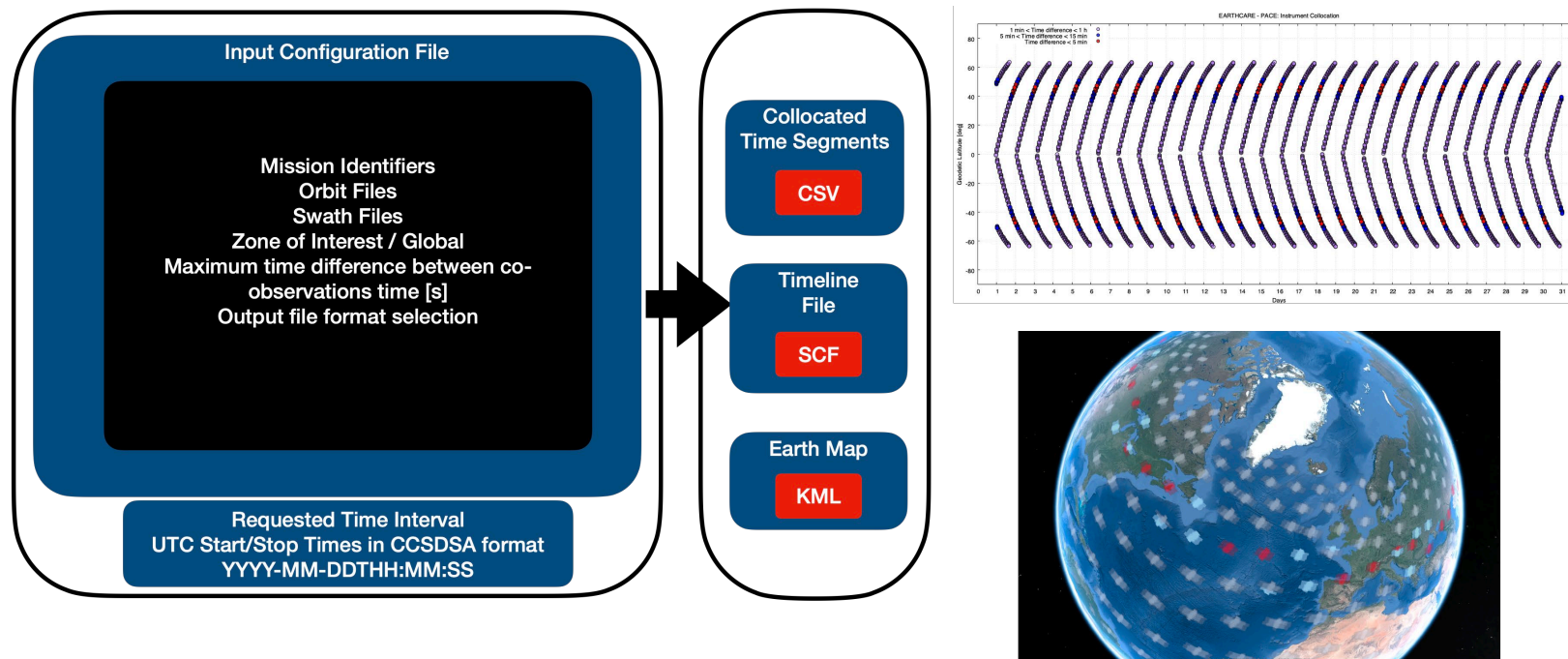


# Coming Soon: Instrument Collocation Tool

## Overview

Command line executable that calculates the **collocated observations** (in time and space) between two different satellite **orbit ground-tracks** or instrument swaths.

- It will be available for: macOS, Windows and Linux (all 64-bit)



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# SAMI Application

## Overview

Application that displays high-definition 2D and 3D scenarios of ESA Earth Observation satellites, including EarthCARE

- Available for: Windows, macOS Intel, Linux (all 64-bit) and iPad

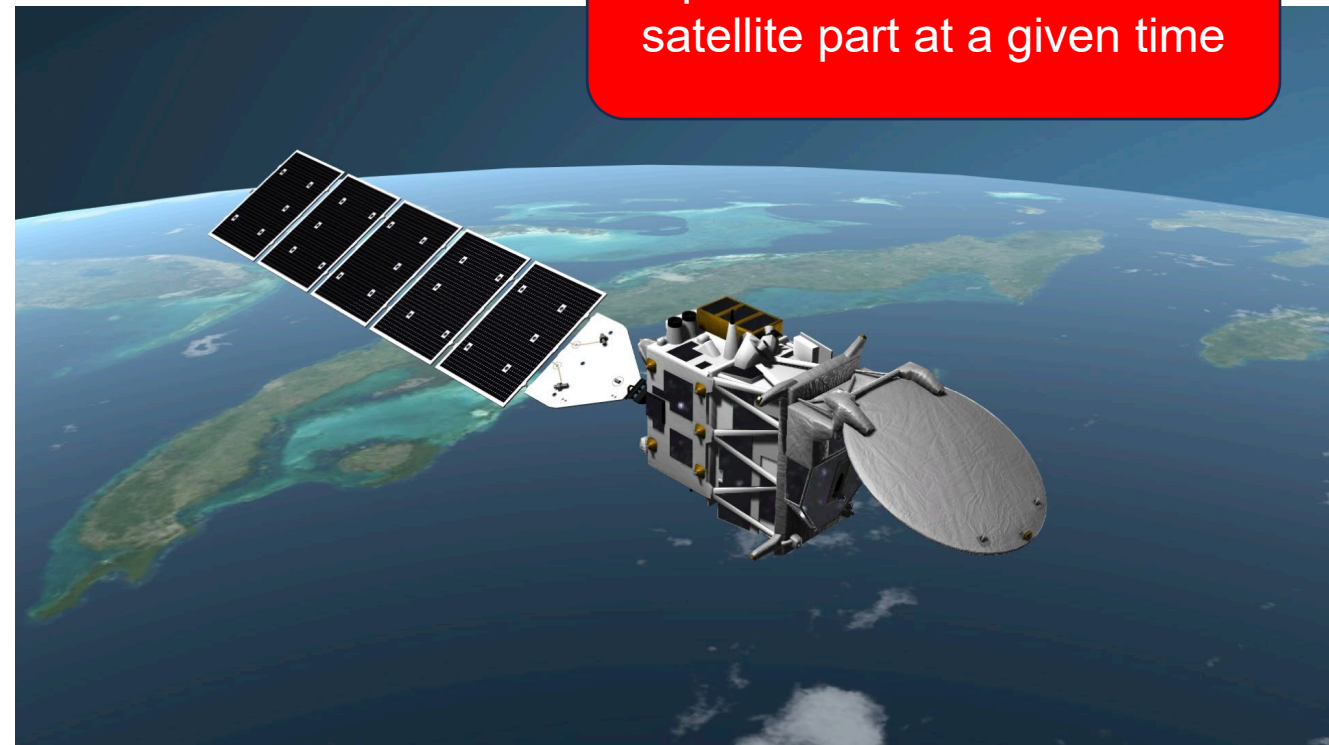




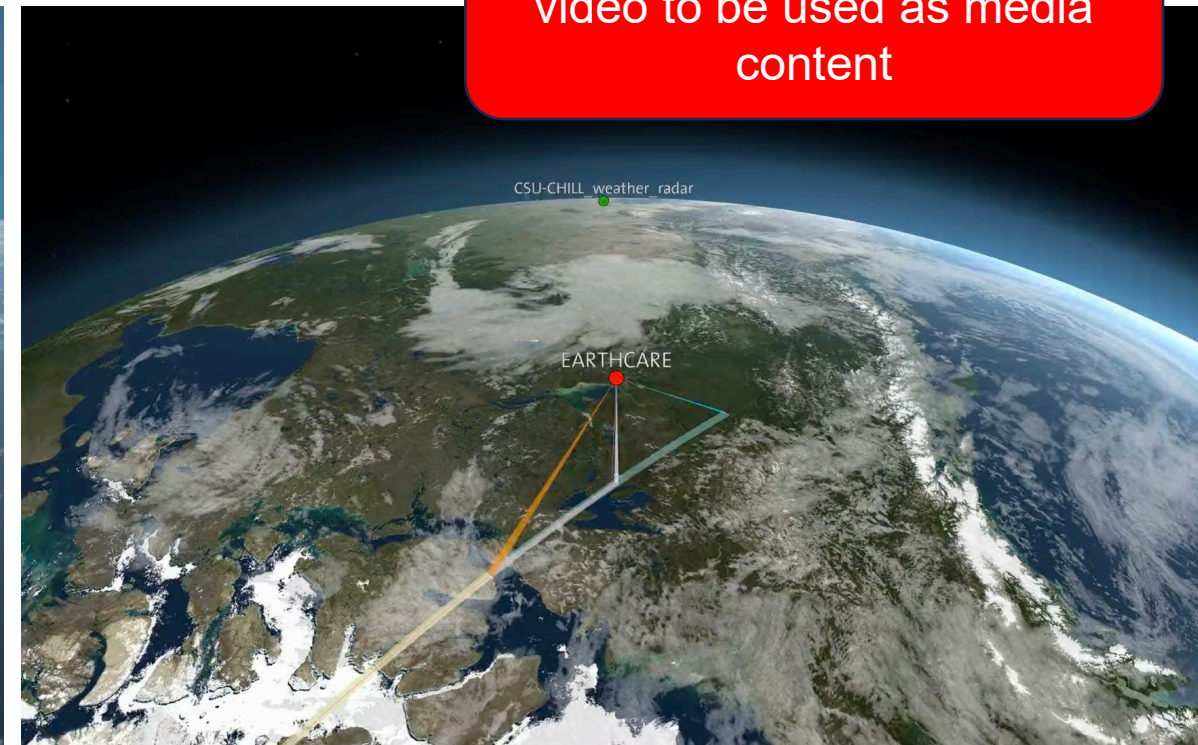
# SAMI Application

## Use Cases

Inspect solar illumination on a satellite part at a given time



Export screenshots or HD video to be used as media content







# Download and Support Links



**ESOV**

**ZoneOverPass**



**SAMI**

**TrajectoryOverPass**

