



H2020 EO Big Data Hackathon

7-8 OF NOVEMBER 2019
(FRASCATI, ITALY)

Session D: CANDELA

Main idea during the session is to have users from the other projects and the other participants as **beta-testers of the tools already deployed in the CANDELA platform** in the CreoDIAS cloud.

Core exercises are related to the current (not final) analytic tools being developed: optical change detection, SAR (Synthetic Aperture Radar) change detection, and data mining for Sentinel-1 and Sentinel-2 data products; and will help as well to assess the usability of the platform (platform access, jupyter lab functionality and/or data access and management).

Step-by-step exercises will be presented in different jupyter-notebooks:

Exercise 1: Change detection on Sentinel-2 data product. Objective: Find the high-level of changes on a vineyard of Aquitaine (region of southwestern France) and the related information. This exercise not only shows how to run the change detection pipeline on Sentinel-2 images, but also presents CreoDIAS tool to access data, and introduce triplication and semantic search tools in order to interlink external datasets and query the database.

Exercise 2: Change detection on Sentinel-1 data product. Objective: Find all the changes over the Torun city (Poland) after a storm. This exercise shows how to access Sentinel-1 data and run the change detection tool on SAR images.

Exercise 3: Data Mining - Overall interactive and iterative process of discovering useful information in the Sentinel-1/-2 product or a collection of products. Objective: Discover in the EO products relevant and application-valuable scene structures; perform semantic annotation of selected structures, and generate a semantic catalogue for the observed area.

Technical Requirements and Prerequisites

- Watch the recorded Webinar here: <https://youtu.be/8DOEo5aEEPo>
- Laptops with internet access.
- Access to the platform will be via web browser (Firefox preferred) and login and password are needed. Credentials will be provided at the hackathon, either by generic accounts or after collecting participants' name/e-mail.
- Rights to download DLR front-end tool (around 10MB). To unzip the front-end file, compression software (e.g., WinZip, 7-zip) is needed; to run the tool, Java Runtime Environment (JRE) and command-line window is required.

Useful links

<http://www.candela-h2020.eu/content/data-mining-v2>

<http://www.candela-h2020.eu/content/deep-learning-v2>

<http://www.candela-h2020.eu/content/semantic-search-v2>