



UP42 is the open platform and marketplace for Earth observation data and analytics. Our core mission is to democratize access to geospatial data, algorithms and computing infrastructure, making it easy to derive insights from geospatial data at scale.

UP42's platform offers companies and developers access to a range of commercial and open data sources as well as a variety of data processing algorithms for data preparation, calculation of indices and statistics and advanced ML-based algorithms, e.g. change detection and object detection. We support a wide range of use cases, including agriculture, insurance, infrastructure and environmental monitoring and more.

In addition to relying on UP42's marketplace of data and algorithms, developers and data scientists are able to upload their own processing algorithms to the platform to use together with those from the marketplace.

## **UP42 Workflow & Processing Engine**

The Workflow & Processing Engine, provided on the UP42 platform, enables customers to easily build and configure workflows. These workflows represent a template, consisting of chain-able data and processing tasks. Jobs are executed against the workflow. Each job includes a more specific configuration (e.g., AOI, date range, data & processing properties).

All of these actions (managing projects, workflows, configurations and jobs) can be completed via the user interface, the API, or the dedicated Python SDK.

The infrastructure is designed for massive scale. Jobs are executed on dedicated processing clusters that are managed by UP42. Each job task (data, processing) is running within an isolated space, receiving the required limits for CPUs, memory and GPUs.

Example:

- SPOT (data acquisition): 2 CPUs, 10 GB memory
- Tiling (data pre-processing): 1 CPU, 5 GB memory
- Car detection (ML-based object detection): 4 CPUs, 20 GB memory, 1 GPU

Each block configuration contains a hardware specification which is managed by the provider. We continuously work together with our partners to ensure that we meet the data and algorithm specific hardware requirements.

**Available algorithms on the UP42 platform are sourced via three main channels:**

- Private algorithms (custom blocks)

UP42 allows customers to bring their own private algorithms to the platform. These are not made public and can only be used by the provider.

- Marketplace algorithms via partners

Our marketplace offers a wide range of algorithms, mainly provided by our partners. These algorithms are available to any customer on the platform.

- Marketplace algorithms via UP42

UP42 internally develops high-value algorithms for the corresponding data sources. These range from open-source algorithms, over preprocessing algorithms to ML-based object detection and classification algorithms.

For a full list of available processing algorithms, please see:  
<https://marketplace.up42.com>