

EarthConsole™ P-PRO – Parallel Processing Service

P-PRO is the hosted cloud-based parallel processing service of the EarthConsole™ enabling users to request a parallel processing campaign to run on available processors/algorithms, scaling up the area of interest and/or time window.

Advantages at a glance:

- **FAST EARTH OBSERVATION DATA ACCESS**
P-PRO resources are deployed on the DIAS infrastructure providing access to the available EO data catalogue locally avoiding the time consuming remote download of the data.
- **FAST DATA PROCESSING**
With P-PRO users can receive processing results in a considerably reduced time. P-PRO relies on a Parallelizer Engine, to partition the application input data and operations into smaller tasks and to distribute them over a set of computing nodes where they will be executed in parallel. Once all the tasks have been completed, the orchestrator gathers the results of the parallel computation and makes them available to the user.
- **RESOURCES OPTIMIZATION**
P-PRO only uses the necessary resources when it needs them. The cluster resources are managed by a Cloud Scaling Engine capable of automatically adapting the amount of computing resources based on the workload of the cluster. In this way the platform ensures that the parallelization effort is always matched with an adequate amount of computing power.
- **MIGRATION FLEXIBILITY**
P-PRO allows for a smooth migration of any processor from other platforms such as the ESA Grid Processing on Demand (G-POD). If the processor is not yet integrated, users might invoke first the EarthConsole™ I-APP (Application Integration) service for making it available in P-PRO.
- **IMPROVED MONITORING**
To support the platform operations, P-PRO is equipped with a web-dashboard for the submission of processing sessions and for the monitoring of the sessions progress, resources usage and system status. In this way, EarthConsole™ operators can monitor users' processing status and resources employed at any time.
- **INTEGRATED SERVICE**
P-PRO complements the functionalities offered to EO data users via the G-BOX (Integrated Development and Execution Environment). P-PRO can be configured in chain with the GBOX where the results might be accessible for post-analysis and visualization.

Users can submit a sponsorship request for this service via the NoR portal.

EarthConsole™ G-BOX – Hosting

The **G-BOX Hosting** option makes available to EarthConsole™ users the hosting service for their algorithms/processors already developed in the G-BOX IDE or offline. The G-BOX Hosting service enables algorithm owners to make available their application ready to scale and perform processing campaigns. The G-BOX Hosting service will enable the use of such algorithms with EO data and user private data and will take care of the optimization and use of processing resources.

Users can submit a sponsorship request for this service via the NoR portal.

EarthConsole™ G-BOX IDE – Integrated Development Environment

The **G-BOX service** offers a cloud-based virtual machine for algorithm and software development, with Jupyterlab for a web-based interactive access.

Advantages at a glance:

- **FAST ACCESS TO EARTH OBSERVATION DATA**
G-BOX instances are deployed as Virtual Machines on the DIAS and provide high-speed network connection access to the dataset offered by the Data and Information Access Services – DIAS, preventing users from the costly remote download of the data.
- **PRE-INSTALLED SOFTWARE FOR EARTH OBSERVATION DATA ANALYSIS**
The virtual machine comes with pre-installed packages and software supporting Earth Observation data exploitation: SNAP, QGIS, R, BRAT, and JupyterLab for quick data analysis and visualization. The flexible nature of G-BOX offers the possibility to install additional software on request.
- **ACCESSIBILITY ANYWHERE**
The cloud virtual machine is accessible from any device and any location via one's own PC using SSH for command line access, x2go for remote desktop and JupyterLab for http web access.
- **READY-TO-USE SCRIPTS**
A set of custom Jupyter Notebooks and ready-to-use scripts can be made available on the virtual machine for data discovery, download, access and visualisation.
- **FLEXIBILITY**
G-BOX offers a flexible amount of CPUs, RAM and dedicated storage tailored to users' requirements. When needed, users can request upgrades of the configuration (asking more CPUs, RAM or storage), compatibly with the Cloud infrastructure constraints.
- **A DEDICATED Web App TO CONTROL THE G-BOX**
Users will have full control over their customized virtual machine through a dedicated Web App where they can review the resources, the VM status and information, start and stop the VM or get in touch with us to request support.

Users can submit a sponsorship request for this service via the NoR portal.

EarthConsole™ – Support Services

BASIC USER SUPPORT (FREE)

Support for basic requests. Additionally, documentation is made available on the [EarthConsole™ website](#) to show how to use the service covering common questions usually asked by users to understand and fully exploit G-BOX, P-PRO and I-APP.

EARTHCONSOLE™ G-BOX AND AD-HOC CUSTOMIZATION (PAID SERVICE)

- **G-BOX Customization**

Installation and configuration of additional software not provided by default with the G-BOX, or ad hoc customization of the environment such as installation of a ftp server, web server, firewall configurations, etc., can be requested as a paid service. With paid assistance users can rely on the expertise of the support team. Under particular circumstances, users may obtain temporary administrator privileges to carry out the needed customisations autonomously under their responsibility. This option has no extra costs for the users (free service) but it is not recommended as the system is not guaranteed against system corruption and any subsequent intervention requested to the support team to fix or revert back the damaged environment will be accounted as a paid service.

- **Ad-hoc Customization**

Ad hoc extra customizations are possible for EarthConsole™ services and are in general offered as paid services. Examples of ad hoc customisations are: special requests for processing results delivery in terms of time; ordering of products; packaging; formats different to what is already available in the integrated service (reprojection, metadata extraction, etc.); storing of processing results beyond the standard retention period; webinars of dedicated online/on-site training sessions organized for groups or individuals.

SUPPORT TO APPLICATION INTEGRATION (PAID SERVICE)

The [Application Integration service I-APP](#) makes available to EarthConsole™ users expert support to integrate an EO application in a selected cloud exploitation environment (e.g. EarthConsole™ P-PRO, etc.). It can enable algorithm owners to make available their application via selected EO exploitation platforms. The I-App service is provided to users that want to resort to EO Exploitation Platforms or parallel processing environments (e.g. P-PRO) but do not have enough resources (e.g. time, IT expertise, etc.) to integrate their application by themselves. The I-APP service can supplement such resources and at the same time provide a platform-independent service. I-APP main process steps are: to verify algorithm and related documentation provided by the user; to run the algorithm according to the provided working example; to adapt and optimise the algorithm to the target cloud platform; to run verification test; package and deliver the test results to the user for validation and confirmation; to complete the application integration; to provide the user with the agreed deliverables.

Users can submit a sponsorship request for these services via the NoR portal.

For any further clarification on what could be covered by the ad hoc customization, please do not hesitate to [get in touch](#).