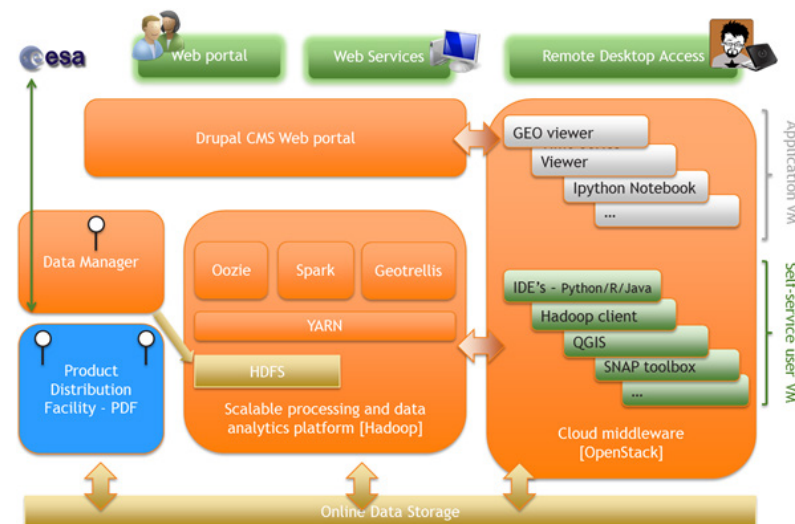


## → CONTINUOUS DEVELOPMENT

The platform will be progressively developed and deployed in several iterations, where we build an end-to-end solution using various technical components:

- >> Hadoop, as a software framework for data-intensive distributed workflows, is used to process large amounts of data in small parallel operations. Spark is applied intensively to allow analytics on large time series of data. The Hadoop ecosystem provides furthermore a rich and still growing set of tools, which enables fast access to the data in a format needed by a specific application.
- >> Cloud computing technology enables dynamic resource provisioning in a performing and scalable solution, on which we can offer Virtual Machines tailored to the needs of specific users.



- >> A data manager provides access to data available on the platform or can download data automatically from other providers.
- >> Interactive web-based dashboards show user-tailored information calculated on-the-fly from the EO-data archive.
- >> Finally the focus on web services according standardised or widely-used interfaces allows an easy integration of services into 3<sup>rd</sup>-party applications.



**proba-v**  
mep

### VITO Remote Sensing

Erwin Goor | Project Manager | [erwin.goor@vito.be](mailto:erwin.goor@vito.be)  
Jeroen Dries | Technical Lead | [jeroen.dries@vito.be](mailto:jeroen.dries@vito.be)

<http://proba-v-mep.esa.int>

## Mission Exploitation Platform PROBA-V



On-demand processing services



Platform for application developers



Time series exploration



<http://proba-v-mep.esa.int>



## ➔ MISSION EXPLOITATION PLATFORM PROBA-V

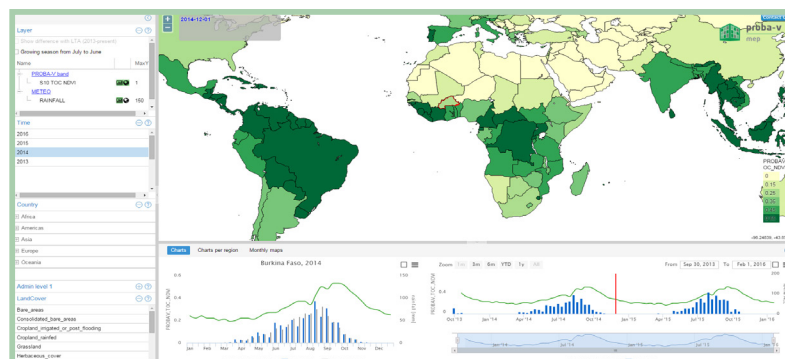
The Mission Exploitation Platform (MEP) PROBA-V, as an ESA pathfinder project, has the ambition to complement the PROBA-V user segment by building an operational Exploitation Platform on these data, correlative data and derived products, addressing the wider vegetation user community with the final aim to ease and foster the use of PROBA-V data. The platform goes beyond offering standard products by providing in a first place tools to visualise and analyse large time series of data, pre-defined on-demand processing services which deliver user-tailored products and a development environment for application developers.

## MEP PROBA-V brings the users closer to the data

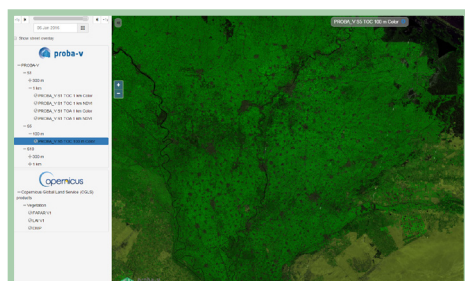
The MEP PROBA-V combines scalable processing resources with a large data archive (+PByte) and a rich set of tools. Users can develop-debug-deploy their own applications on a scalable platform with access to the full data archive from PROBA-V, SPOT-VEGETATION and a growing set of derived products from different users. Also data which supports the users in doing their research (Cal/Val, meteo data, etc.) will be provided. Users can co-work on the platform, share results and relevant documentation.

## > Time Series Viewer

With the Time Series Viewer you can explore PROBA-V time series, complemented with meteo data and derived indicators for vegetation products.



## > Geo Viewer



The Geo Viewer allows you to view the PROBA-V data in full resolution. The Geo Viewer is backed by OGC standard based web services (WMS, WMTS) which can be accessed using a simple web browser or tools such as QGIS.

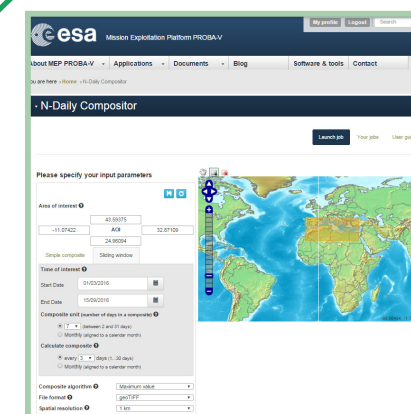
**➔ USER DRIVEN**

Several third-party service projects will develop and operate applications on the MEP PROBA-V. We will address their user requirements to implement the shift of paradigm from “data to user“ to “user to data“, bridging the gap between the traditional EO ground

segment and the scientists or value added industry.

**Contact us if you want to be involved to integrate your application - your data - your software library - your development project on the MEP PROBA-V.**

- > Pre-define on-demand processing chains



As a first example of an operational on-demand processing chain, an N-daily compositor is released. Temporal compositing is a general technique used in optical remote sensing, where daily observations are composited into the temporal domain to generate proper images, e.g. to acquire cloud-free images.

Applications from users can be offered in a similar way to be invoked on a scalable processing platform.

## > Cloud Toolbox and IPython Notebooks

With the Cloud Toolbox, a developer or researcher can access a Virtual Research Environment with access to the complete PROBA-V data archive and a powerful set of tools and libraries to work with the data (e.g. SNAP toolbox, GRASS GIS, QGIS, GDAL) or to develop – debug - test applications (R, Python or Java). Notebooks will provide a programming interface from a simple web browser for interactive data analytics with rich media output.

