Polar View is a member-based organization comprising a dynamic group of service providers, government agencies, research institutes, system developers and universities from across Europe and Canada. Each organization brings diverse and complementary skills and world-renowned expertise in polar earth observation technologies, applications, and research. Our team is committed to delivering leading-edge data and information services for addressing polar issues that meet the on-going needs of our user sectors.

Our work supports safe and cost-effective marine operations, improved resource management, sustainable economic growth, and risk protection across sectors and around the world. Using satellite earth observation data, in combination with sophisticated models and automatic tools, our services include information about sea ice, icebergs, lake and river ice, snow cover and glaciers.

Polar TEP Machine Learning Platform

The Polar TEP machine learning platform provides a full stack of services needed to manage the entire lifecycle of data – from storage with the world's most scalable Hadoop distribution and its unique metadata architecture HopsFS, to integration of popular distributed processing frameworks such as Apache Spark and Apache Flink, to rich APIs and integration of popular machine learning libraries such as TensorFlow and PyTorch for developing machine learning applications and pipelines. Furthermore, the platform provides a multi-tenant security model based on the abstractions of projects and datasets.

Once a processor has been trained in the machine learning environment, it can be ported to Polar TEP's processor execution environment for routine operational processing.

Polar TEP Data Processing as a Service

Polar TEP provides a number of built-in processors, or users can develop their own (in the Polar TEP Development Environment or in the user's own environment) and implement them in the Polar TEP Processor Execution Environment through the use of Docker containers. A JSON definition file specifies user inputs and defaults for the processor that will be displayed in the processor's user interface. Processors can be used privately or shared with other users.

In the execution environment, processors have access to computation resources that scale dynamically with demand. Processors can be invoked manually through the user interface, or automatically for batch processing (processing of large data collections) or triggered processing (processing invoked as new data is received).

Two levels of access to the Processor Execution Environment are available:

- Standard   – Up to 500 CPU hours of processing time per month.
- Large   – Up to 1000 CPU hours of processing time per month.

Polar TEP Application Hosting Environment (Algorithm Hosting)

For users who want to host their own applications on a VM within the Polar TEP environment, three sizes are available:

- Small 2 CPUs 8 GB RAM 32 GB SSD
- Medium 4 CPUs 32 GB RAM 128 GB SSD
- Large 8 CPUs 64 GB RAM 256 GB SSD

Other configurations are available upon request. Ports can be opened for external communications.

Polar TEP Jupyter Notebooks (Interactive Development)

Polar TEP provides two paths to support processor development:

- An Interactive Development Environment (IDE) based on Jupyter Notebooks.
- A customized VM with all necessary software tools and libraries for development.

Three templates are available:

- Small 2 CPUs 8 GB RAM 32 GB SSD Python Language

- Medium 4 CPUs 32 GB RAM 128 GB SSD Python Language

- Large 8 CPUs 64 GB RAM 256 GB SSD Python Language

Other configurations and languages are available upon request.