



The PITHIA e-Science Centre



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PITHIA-NRF:

Plasmasphere Ionosphere Thermosphere Integrated Research Environment and Access services: a Network of Research Facilities

Project funded by the European Commission's H2020 Programme

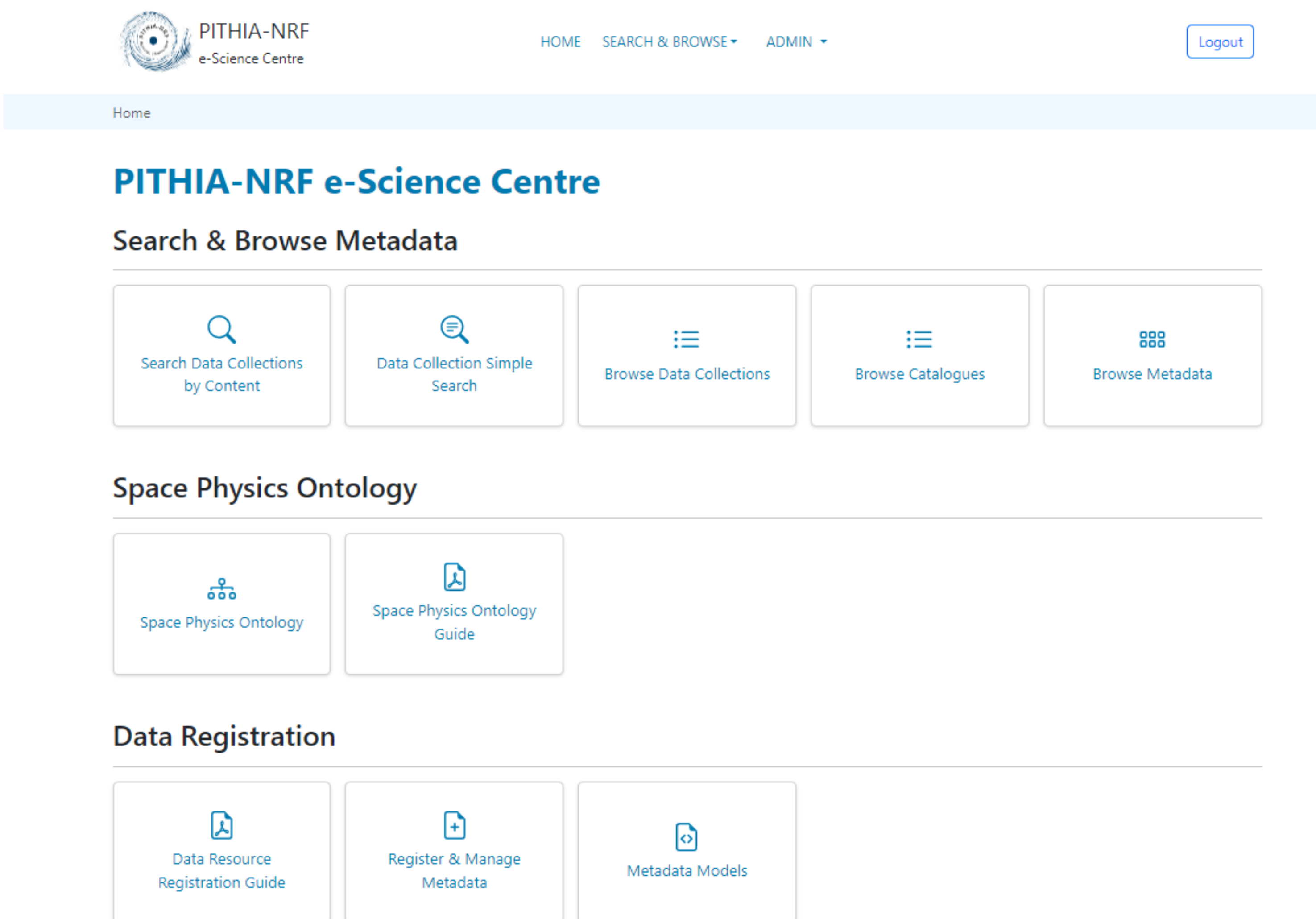
Build a network of research facilities that specifically supports the research community related to the study of the Earth's ionosphere, thermosphere and plasmasphere

PITHIA e-Science Centre (PeSC):

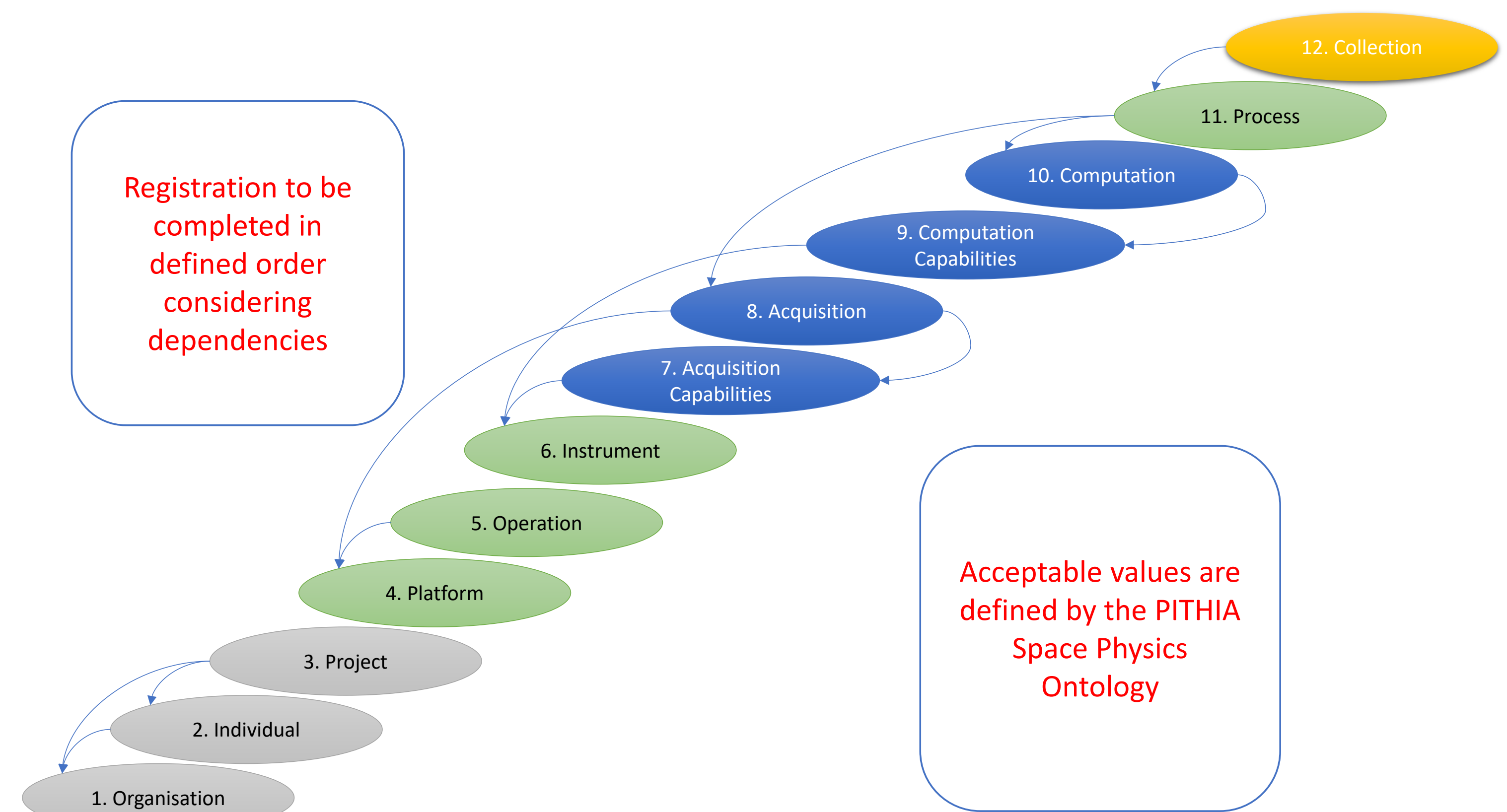
A central web portal to provide a single point of entry to heterogenous and distributed resources (Data Collections and Catalogues)

Describe, publish and search Data Collections (datasets or prediction models) based on a rich set of metadata based on the ISO 19156 standard on observations and measurements, and a Space Physics Ontology

e-Science Centre to find and interact with Data Collection



Data collection publication with standardised metadata and ontology



Main PeSC functionalities:

- Ontology-based search of Data Collections by content
- Searching data collections by free-text
- Browsing Data Collection and Catalogues
- Browsing and seeing examples of the Registered metadata
- Exploring the Space Physics ontology

How to interact with Data Collections?

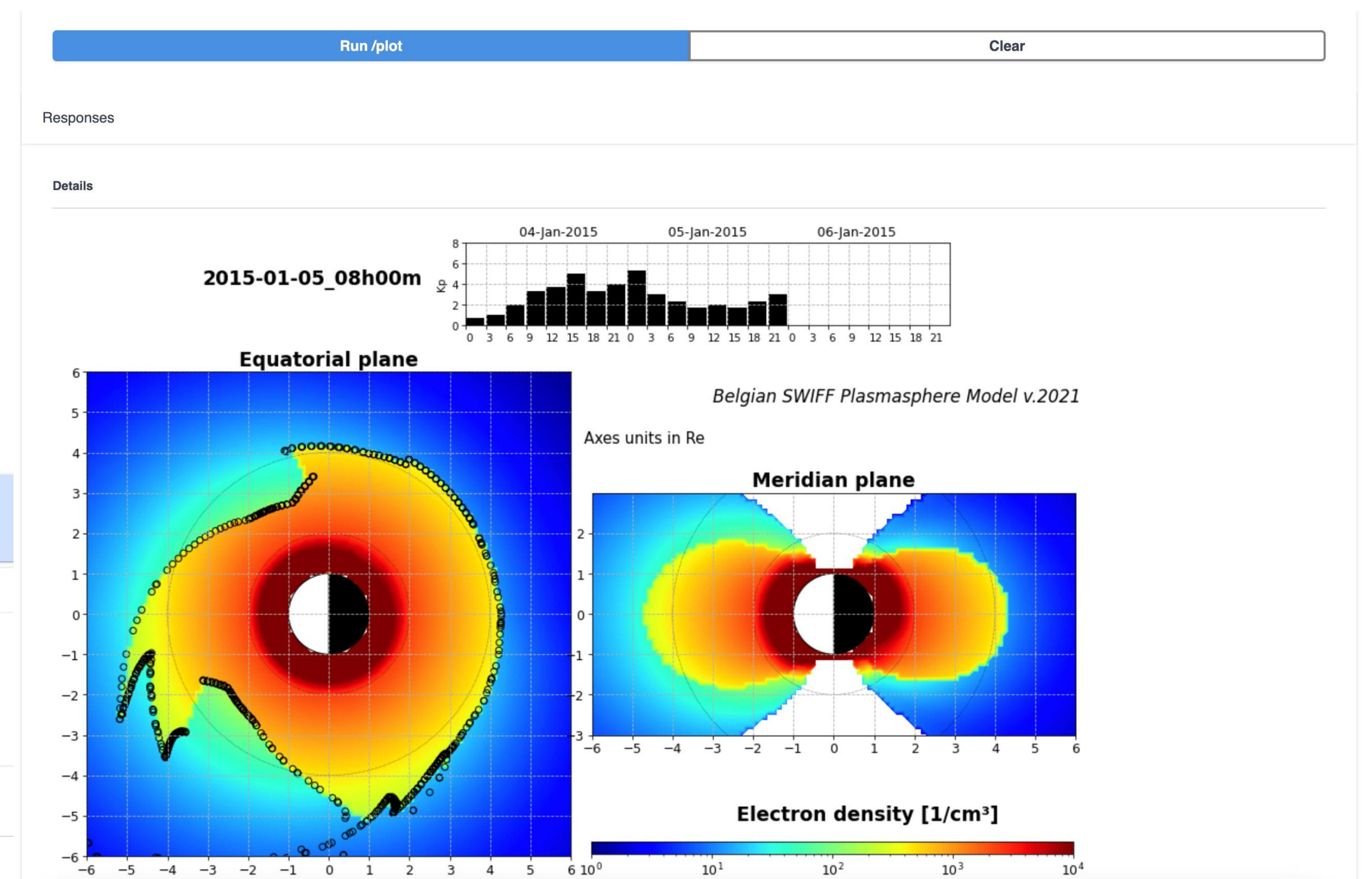
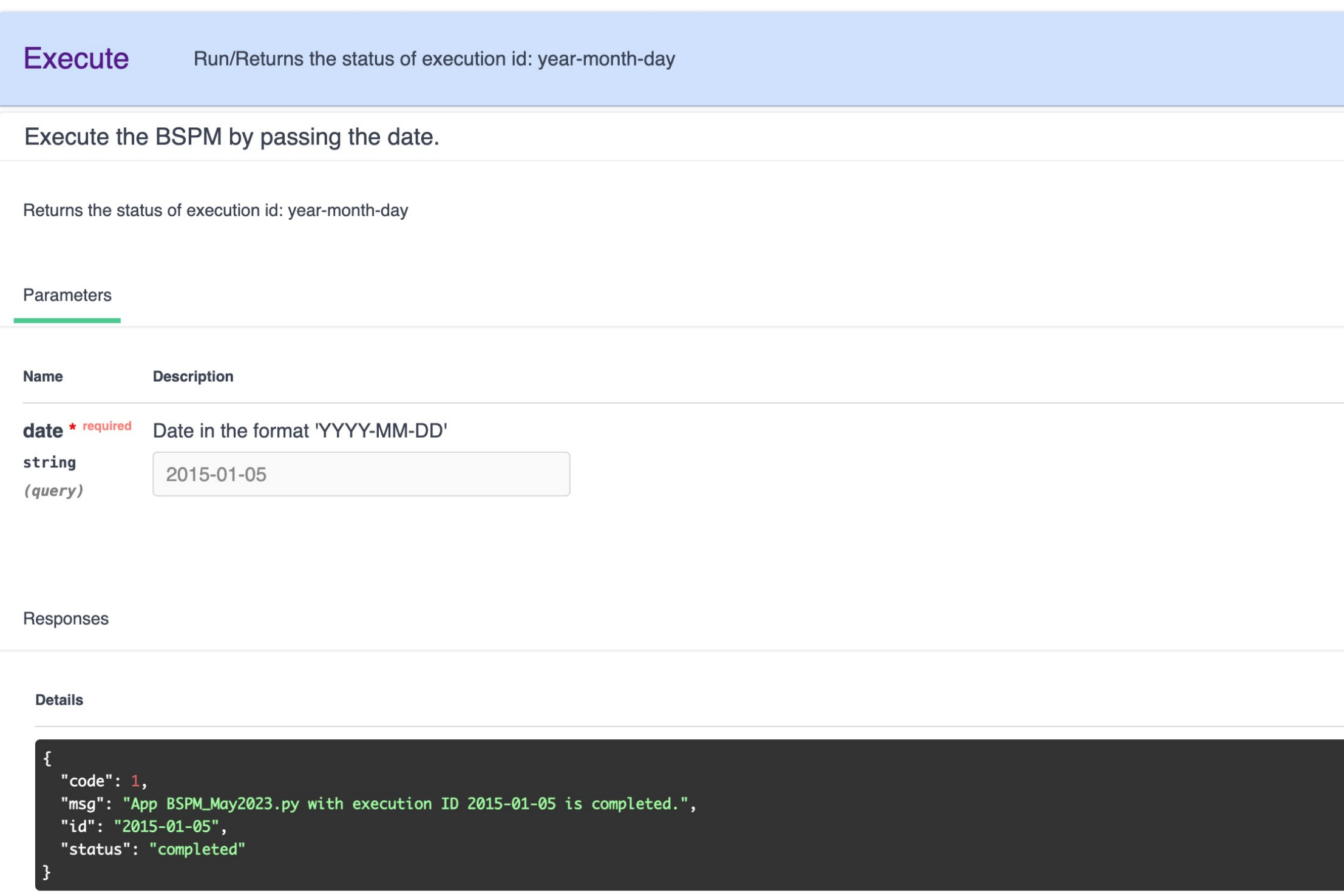
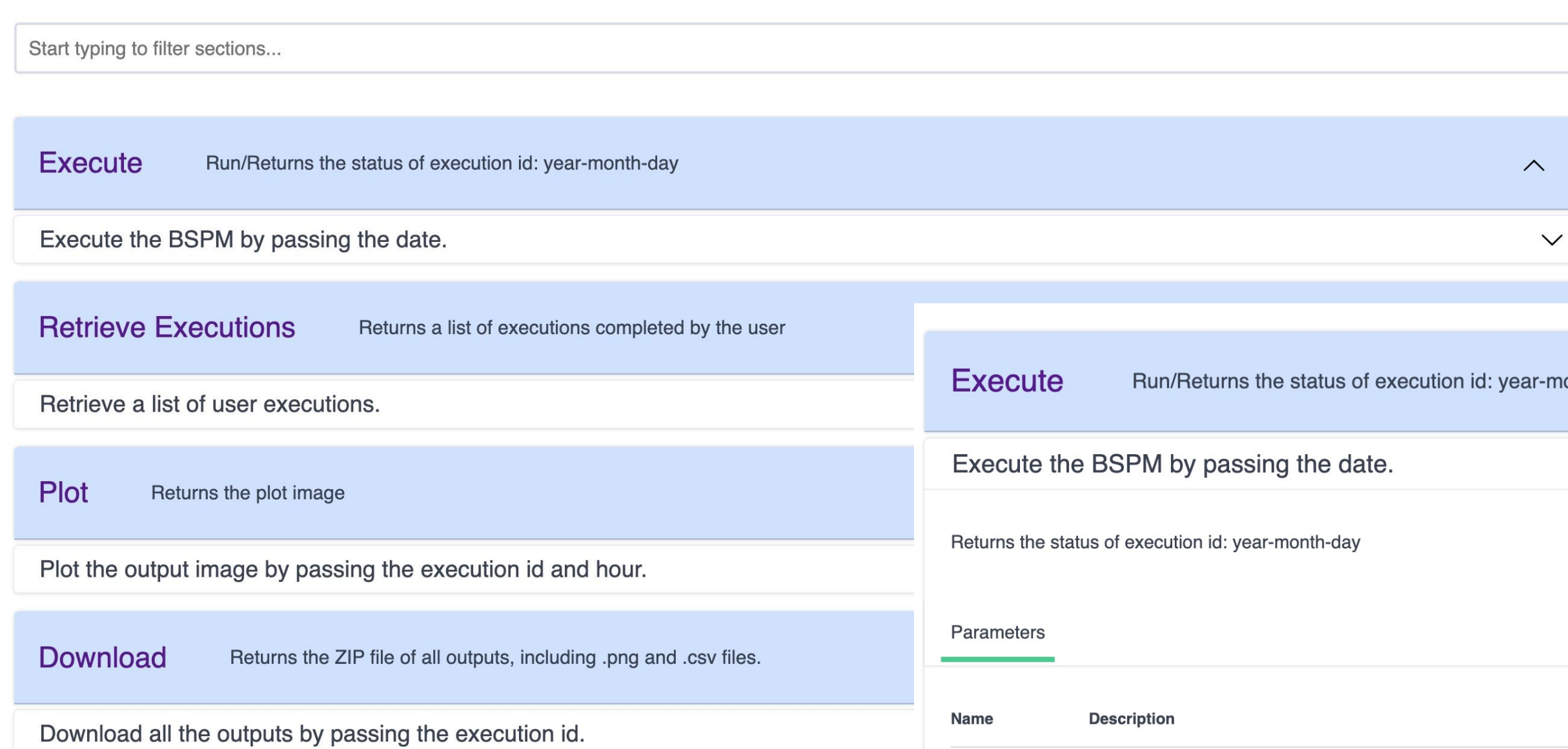
- Return a link and direct the user to the external site of the Data Collection
- Generate a Graphical User Interface automatically in the PeSC based on the API of the Data Collection
- Dynamically deploy Data Collection in the Cloud (coming soon)

An example: BSPM – 3D Kinetic Plasmasphere Model

- Semiempirical model of the plasmasphere developed by the Solar Wind Division of the Royal Belgian Institute for Space Aeronomy
- Provides the number density and the temperature of the electrons and protons inside and outside the plasmasphere, as well as the position of the plasmopause, as a function of the geomagnetic activity driven by the Kp index.
- Deployed on the EGI Cloud - executed from the PeSC via API

BSPM API: 3D-Kinetic plasmasphere model

The BSPM is a 3D-Kinetic semiempirical model of the plasmasphere developed by the Solar Wind Division of the Royal Belgian Institute for Space Aeronomy.



More information:

- Visit the e-Science Centre: <https://esc.pithia.eu/>
- Visit the PITHIA NRF Website: <https://pithia-nrf.eu/>
- Watch our video:

