



## ESA Climate Change Initiative (CCI) Permafrost – AWI WebGIS visualisation of Permafrost\_cci timeseries data



The European Space Agency (ESA) Climate Change Initiative (CCI) is a global monitoring program which aims to provide long-term satellite-based products to serve the climate modelling and climate user community. Building on GlobPermafrost (2016-2019), **Permafrost\_cci** data products are elaborated during Phase 1 CCI+ (2018-2021) and continued during Phase 2 of CCI+ (2022-2026).

**Permafrost\_cci timeseries products** from 1997 to 2023 in 1km resolution are:

Permafrost Temperature

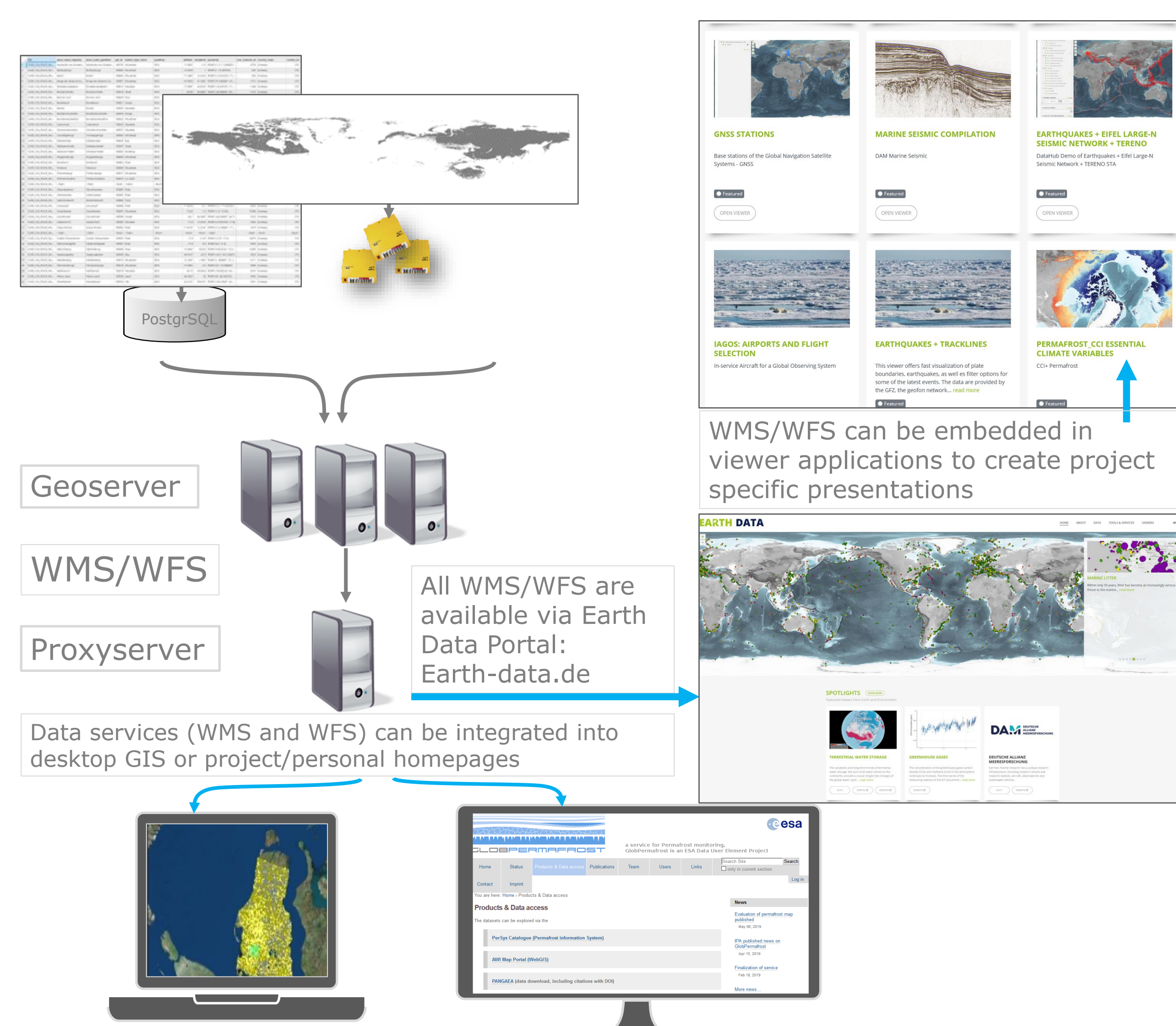
Active Layer Thickness

Permafrost Fraction

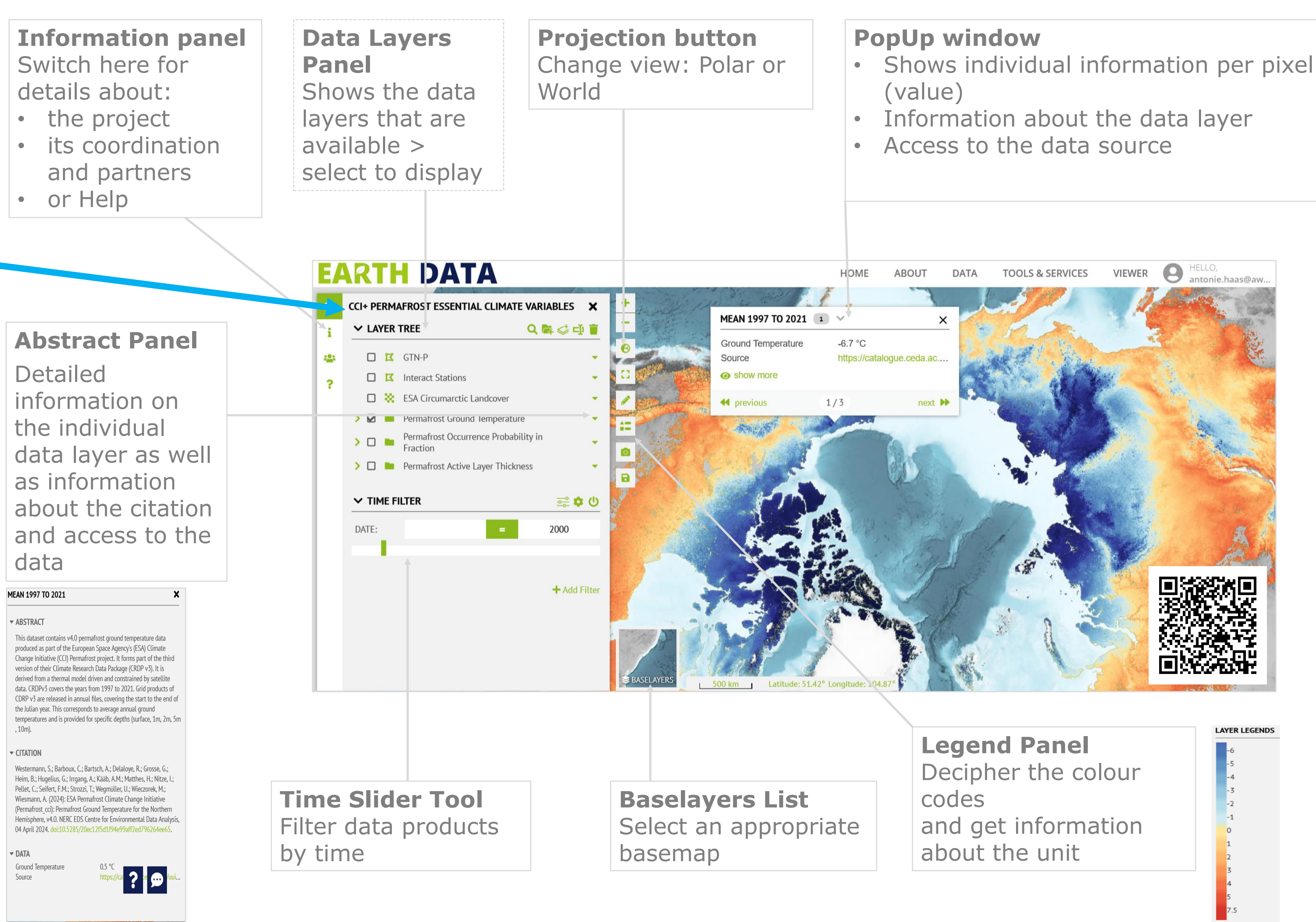
ESA Circumpolar Landcover (Additional product service)

**Earth-data.de** is a frontend and point of access to data viewers that show data published as digital data services based and realised upon GIS (Geographical Information Systems)-based geodata infrastructure at AWI. GIS server technology enables the digital publication and therefore visualization of multidisciplinary project data in the World Wide Web. **Permafrost\_cci timeseries** datasets have been published as WebGIS services relying on OGC-standardized Web Mapping Services (WMS) and Web Feature Services (WFS). **Permafrost\_cci timeseries** WMS are embedded in a JavaScript GIS viewer application based on a leaflet library. All services are interoperable and can be integrated into various desktop GIS applications.

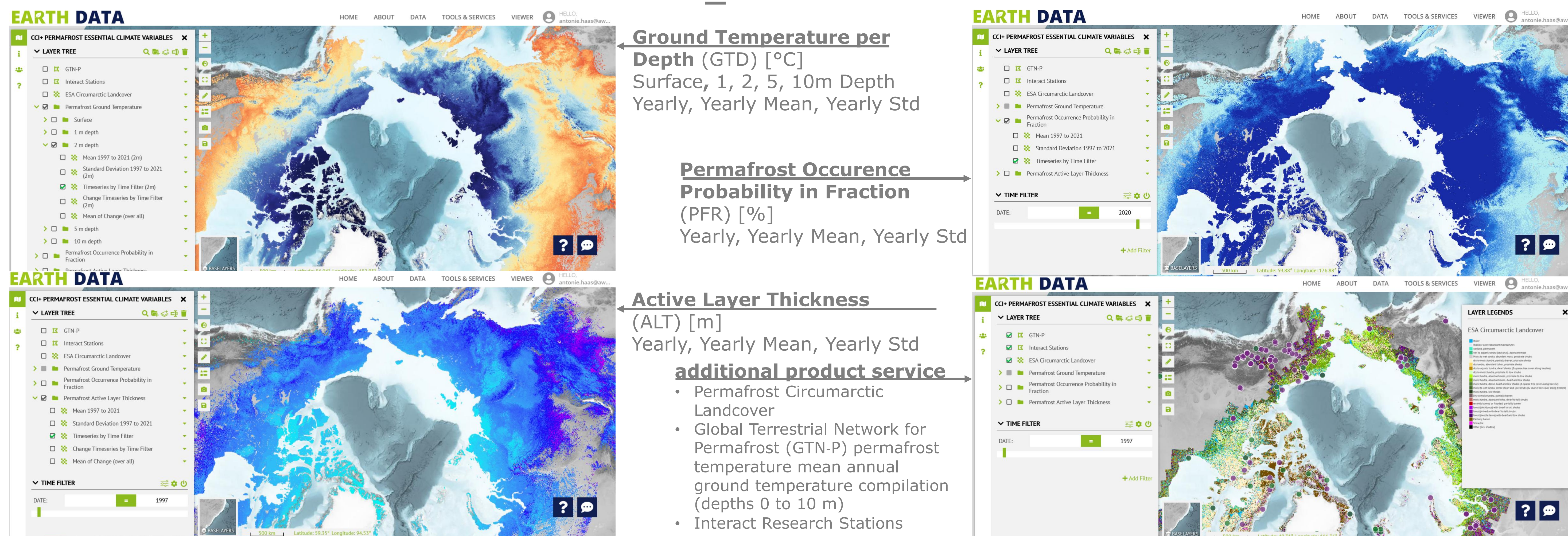
### O2A Infrastructure Framework



### Permafrost\_cci timeseries Viewer Functionalities



### Permafrost\_cci Data Products



#### Data access:

Permafrost\_cci timeseries: Westermann et al. (2024): Permafrost\_cci: Permafrost v4 data product <http://catalogue.ceda.ac.uk/uuid/7479606004d9465bad9>

Permafrost\_cci Circumpolar Landcover: Bartsch et al. (2024): <https://doi.org/10.5281/zenodo.14235736>

Global Terrestrial Network for Permafrost (GTN-P) permafrost temperature mean annual ground temperature compilation (depths 0 to 10 m) for assessment of Permafrost\_cci products <https://doi.pangaea.de/10.1594/PANGAEA.972992>

The ESA GlobPermafrost final product data set is published under doi:10.1594/PANGAEA.780111

