

# The Data Catalogue of the Permafrost Information System PerSys – An Open Access geospatial data dissemination and visualization portal for products from ESA DUE GlobPermafrost

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## Abstract

The objective of the GlobPermafrost Project (2016–2019) initiated by the European Space Agency (ESA) is to better understand the global impact of changes in permafrost by providing earth observation data for the science community. For this purpose, various remote sensing products on the subject of permafrost are developed, discussed and optimized with the users of these products. The Permafrost Information System (PerSys) was developed for the user-friendly provision and visualization of these data products and is part of the Arctic Permafrost Geospatial Center (APGC). PerSys allows users to conveniently search for permafrost related datasets, obtain metadata and previews, receive information on data prototypes and download the final published data products.

## Introduction

Remote sensing has become an essential tool for quantitatively detecting and monitoring changes in permafrost landscapes over large regions and with repeated observations. The European Space Agency (ESA) has supported permafrost-focused remote sensing activities in two recent projects, ESA DUE Permafrost (2009–2012) and ESA DUE GlobPermafrost (2016–2019; <http://globpermafrost.info>). The Permafrost project validated and implemented earth observation data to support research communities and international organizations in their work on better understanding permafrost characteristics and dynamics. Now, the GlobPermafrost project expands on this successful approach by including both polar hemispheres as well as mountain permafrost regions. Here, we present the PerSys Data Catalogue (Fig. 1).

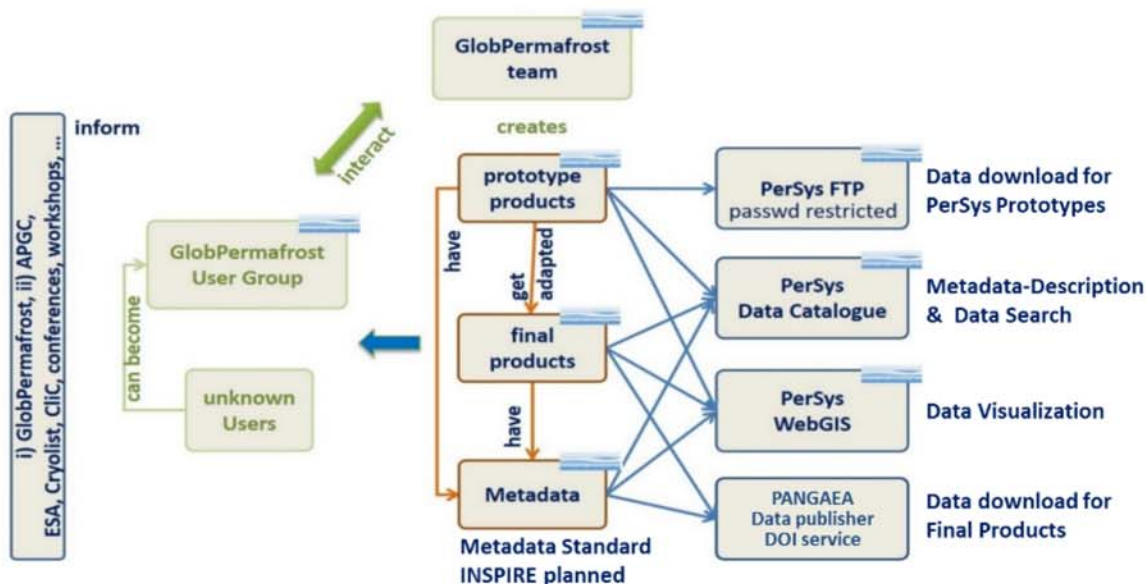


Figure 1: PerSys conception



## The PerSys Data Catalogue

To bring the resulting data products of GlobPermafrost closer to the permafrost user communities, PerSys has been conceptualized as an open access geospatial data dissemination and visualization portal for remote sensing derived datasets produced within the GlobPermafrost project. The prototype and final remote sensing products and their metadata are documented in the PerSys Data Catalogue and visualized in the PerSys WebGIS. PerSys provides access to all mature-state and final-state GlobPermafrost products and their metadata.

The catalogue is available within APGC since early 2017 (<http://apgc.awi.de>). The APGC framework features a range of permafrost-specific geospatial data projects, including PerSys, and allows searching for project-specific geospatial data by tags, keywords, data type and format, license type, or by location.

In addition, the Open Access data library PANGAEA serves as permanent archive for the GlobPermafrost final products, providing permanent Digital Object Identifiers (DOIs) for each archived dataset. Products currently featured in the catalogue include circum-arctic land surface temperature from 2007–2013, Landsat-based trend analysis of land surface indices (NDVI, NDWI etc.), high- and medium-resolution waterbody inventories, and many more.

The final GlobPermafrost remote sensing products published in PANGAEA will remain catalogued, searchable and accessible via the PerSys Catalogue.

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