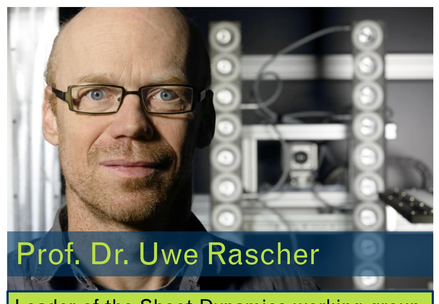
The German FLuorescence EXplorer (FLEX) project office

JÜLICH Forschungszentrum

The Team

Dr. Juliane Bendig

PostDoc in the Shoot Dynamics group, working on remote sensing of vegetation, specialized in sun-induced chlorophyll fluorescence (SIF) since 2016, at Forschungszentrum Jülich since 2020.



Prof. Dr. Uwe Rascher

Leader of the Shoot Dynamics working group at the Institute for Bio- and Geosciences at Forschungszentrum Jülich and professor for quantitative plant physiology at the Rheinische Friedrich-Wilhelms-Universität Bonn, Member of the Mission Advisory Group (MAG) of FLEX.

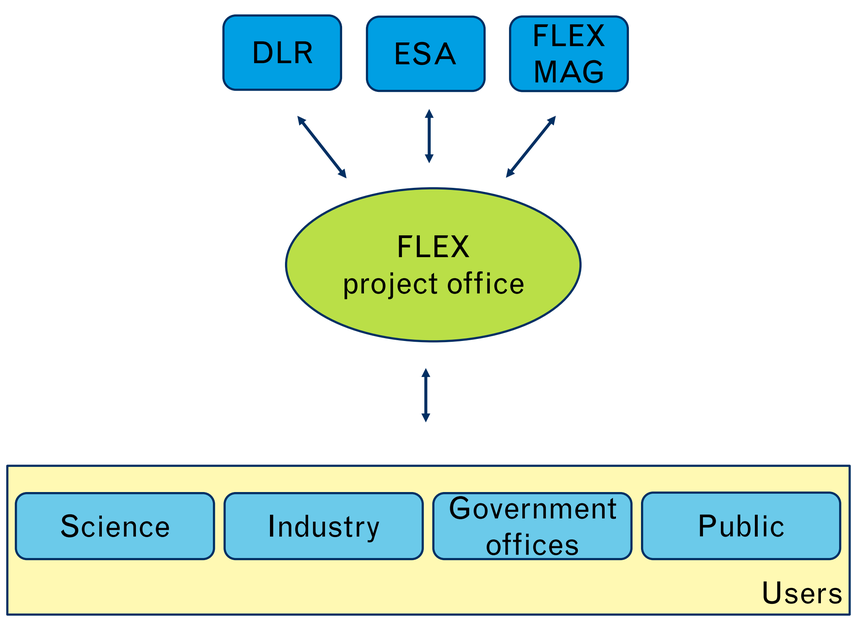
Ireneusz Kleppert (M.Sc.)

Research associate at Forschungszentrum Jülich. During his master's degree in physical geography at the University of Cologne, he specialized in remote sensing and geoinformatics.

The Objective

FLEX is ESA's 8th Earth Explorer mission, which will enable quantitative estimates of photosynthetic activity. It aims at providing physiological indicators of actual vegetation health status and stress conditions.

Our Mission

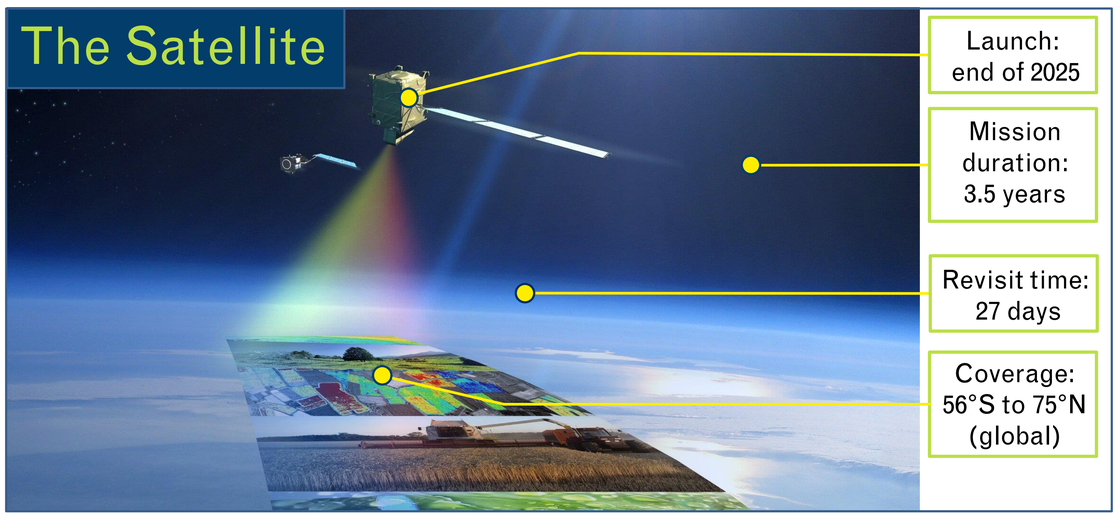


Our satellite data and information providers are the deutsches Zentrum für Luft- und Raumfahrt (**DLR**), the European space agency (**ESA**) and the FLEX Mission Advisory Group (**MAG**)

Our Mission is to be a connection unit bewtween our satellite data and information providers and users. Our role is not only to inform users about FLEX and SIF, but also to identify user needs, build communities, and connect them with our contractors to contribute to the development of data products, algorithms, and tools.

We identify users and build a user community. The general user groups of FLEX data can be found in industry, science, government offices and the public within Germany and the European Union.

The Satellite



The Sensor

FLEX will sense sun-induced chlorophyll fluorescence (SIF) using the Fluorescence Imaging Spectrometer (FLORIS) covering a spectral range of 500 – 780 nm. The spectral sampling intervall will be 0.1 nm within the oxygen bands, 2 nm in the chlorophyll absorption band and 0.5 – 0.65 nm for the other spectra. FLEX will fly in tandem with Sentinel-3 to combine FLORIS with optical and thermal sensors. The spatial resolution will be 300 x 300 m.

The Products

FLEX‘ Level-2b data product will be geophysical parameters derived from FLORIS and Sentinel-3 instruments. Data will be freely available on the multi-mission algorithm and analysis platform (MAAP).

The Tasks

Establishment and operation

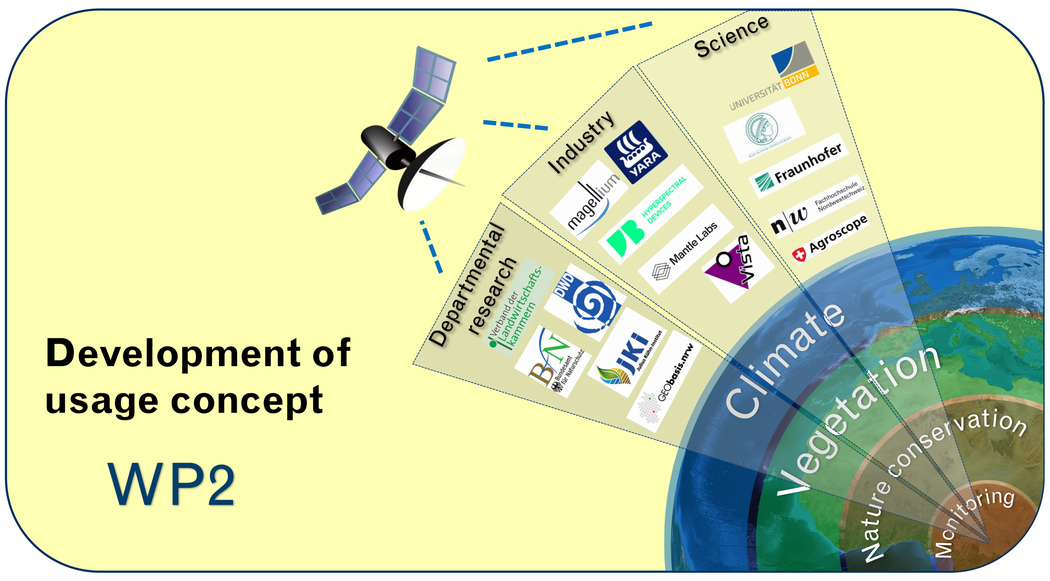
- Inform about mission progress & data use
- Identify technological & scientific questions
- Support users to find funding sources

WP1

Participation in gap analysis and mission concept

- Find gaps in data availability and user expectations
- Suggest how to fill these gaps

WP3



Development of usage concept

WP2

Public relations

WP4

DLR

Supported by:

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