



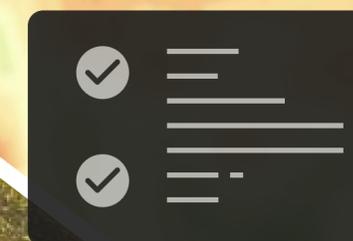
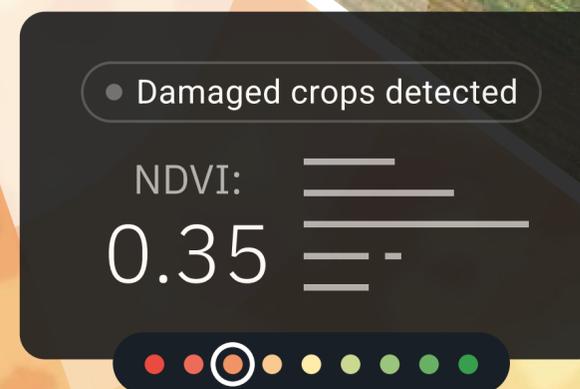
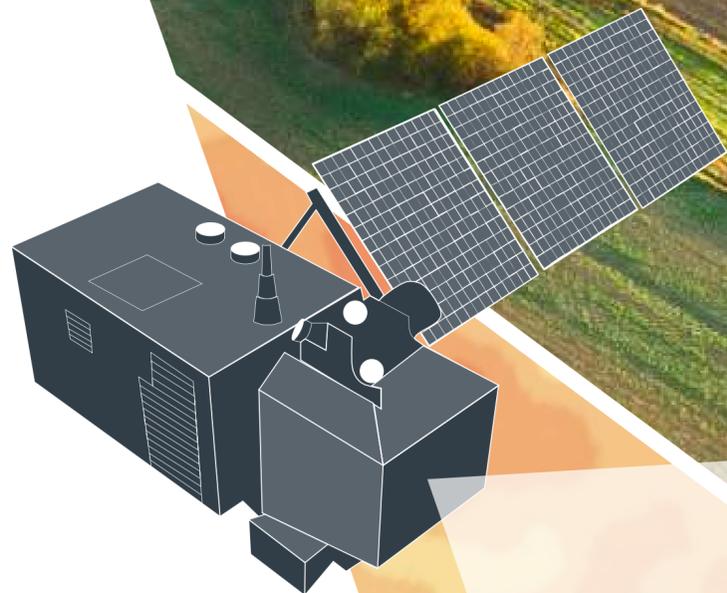
**EOS DATA
ANALYTICS**

Satellite monitoring for agriculture insurers

The recent development in the practical use of satellite monitoring and machine learning technologies has transformed the food production industry around the world. Farming of today is precision agriculture – eliminating guesswork, minimizing effort, reducing waste, cutting expenses, and maximizing productivity.

We provide the latest satellite-driven and AI-powered technologies to insurance companies so they can optimize risk assessment, underwriting, and damage claims validation for their clients' farms. Using EOSDA Crop Monitoring data in processes related to both parametric-based and yield-based insurance allows insurance companies to conduct more precise analytics no matter which type of insurance they are providing. The platform can be especially helpful in index insurance as it offers scalable and objective parameters which can be used for reinsurance. A wide range of EOSDA Crop Monitoring features allows insurers to get their own competitive insurance product to meet customers' needs and improve the understanding of satellite data-based index insurance among farmers.

All of this and more can be easily achieved by using our digital precision agriculture platform, EOSDA Crop Monitoring. We've been working on this product a lot – making sure that the expertise of EOSDA in remote sensing is backed up by the latest available technologies. With years of experience in cooperating with agri-insurance sector, we are confident that this product will benefit them greatly.



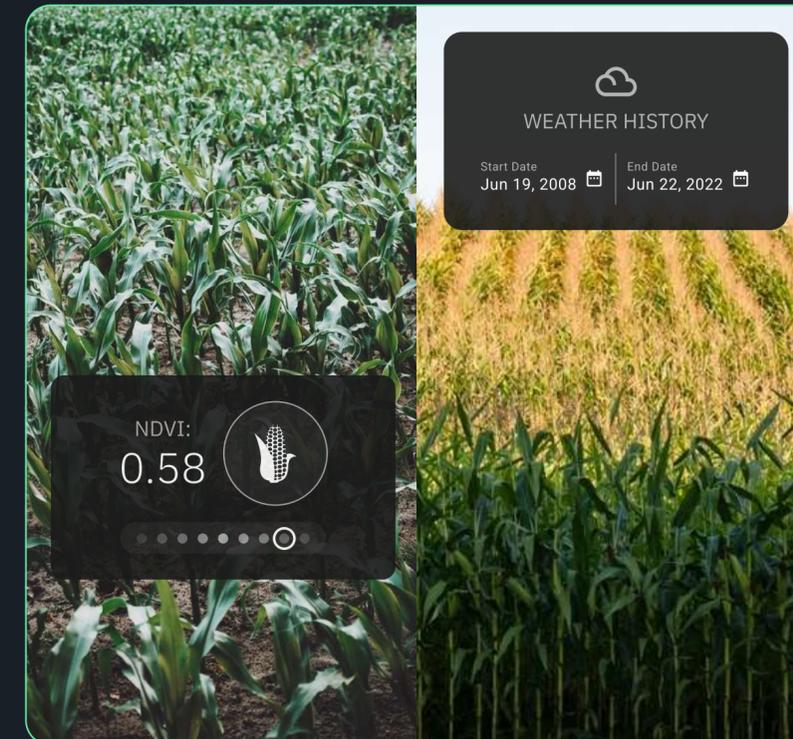
The functionality of EOSDA Crop Monitoring allows for optimizing and speeding up processes required for insurance issuance and validation. The result is insurance processes are made more transparent and understandable for farmers and other partners.

You can:

- ✓ Study field productivity trends and monitor crop performance.
- ✓ Access historical vegetation and weather data on any given field.
- ✓ Compare the state of the field before and after the insured event.

And much more.

Insurance companies can benefit from using our data via API access or as a White Label solution in order to create their own product for parametric insurance and risk assessment purposes. Additionally, we offer a number of AI-powered custom solutions — developed by an experienced RnD team — to some of the most critical challenges of modern agriculture that can also be used as an added value proposition for the clients of insurance companies.



How insurance companies can benefit using EOSDA Crop Monitoring

- ✓ Make well-informed decisions on risk assessment based on definitively large samples of data.
- ✓ Save time and efforts usually spent on sending insurance agents to access the state of the fields.
- ✓ Access to crucial data on the market status for a particular region, country, or globally – key to attracting more customers.
- ✓ Ability to track remotely state of the crop with high frequency of update.
- ✓ Enroll in the partnership reselling program to expand the portfolio and reach out to new markets.
- ✓ Offer our services as an added value proposition to your clients.
- ✓ Increase farmer's awareness about the vegetation indexes and other parameters that can be used for insurance.
- ✓ Create your own product for parametric insurance.
- ✓ Easier access to reinsurance coverage plans with scalable and objective parameters.
- ✓ Build transparent relationships with your clients.
- ✓ Prevent fraudulent actions to the insured fields.



EOSDA Crop Monitoring solutions available for insurers

Satellite field monitoring

- ✓ Remote sensing of any field via regular access to high-quality satellite imagery and vegetation indices.

Vegetation indices

- ✓ A set of tools developed by GIS specialists for remotely analyzing various field-level parameters, such as vegetation density and chlorophyll content at different stages of crop growth. More indices, tailored to special parameters, can be added to the platform on request.

Water stress detection

- ✓ A special algorithm determines the level of water stress in a field, perfect for detecting waterlogging and/or drought conditions in a timely manner.

Growth stages

- ✓ To ensure the correct correlation of different types of data for the field (vegetation indices, temperatures, precipitation, and more), the system displays current growth stage for certain crop types on the platform. We use the international scale (BBCH).
Important! Make sure the sowing date is correctly specified.

Crop rotation

- ✓ You can store data on which crop types grew on the same field in the past seasons. Correctly specify the sowing and harvesting dates for each season, and you'll always have access to the crop rotation record for this field in your account.

Weather analytics

- ✓ The platform provides access to daily weather, historical weather since 2008, and a 14-day forecast. The available parameters include temperature, precipitation rate, cloudiness %, wind speed and direction, and more.

Field leaderboard

- ✓ An interactive tool for prioritizing fields that you own or tend according to crop performance. The fields with the most recent and most negative vegetation index (NDVI) change will automatically be sorted to the top of the list. There are 7 other criteria according to which you can prioritize your fields and download field lists as pdf or spreadsheets.

Vegetation map

- ✓ A map for optimal (cost-efficient) nitrogen fertilizer application, precision irrigation, and effective crop protection measures. Thanks to a special algorithm, a field gets visually divided into zones according to the vegetation values, which, then, allows you to carry out the variable-rate application of inputs, thus saving money. A ready vegetation map can be exported from the platform and used as a script by the farm equipment.

Productivity map

- ✓ This map helps you decide on the amount of phosphorus and potassium fertilizers to be applied in particular areas of the field based on the productivity measurements for a selected period of seasons. Other uses of the productivity map are differential sowing (matching the amount of seeds with the productivity of a particular area of the field) and cost-efficient precision soil sampling.

Precision scouting

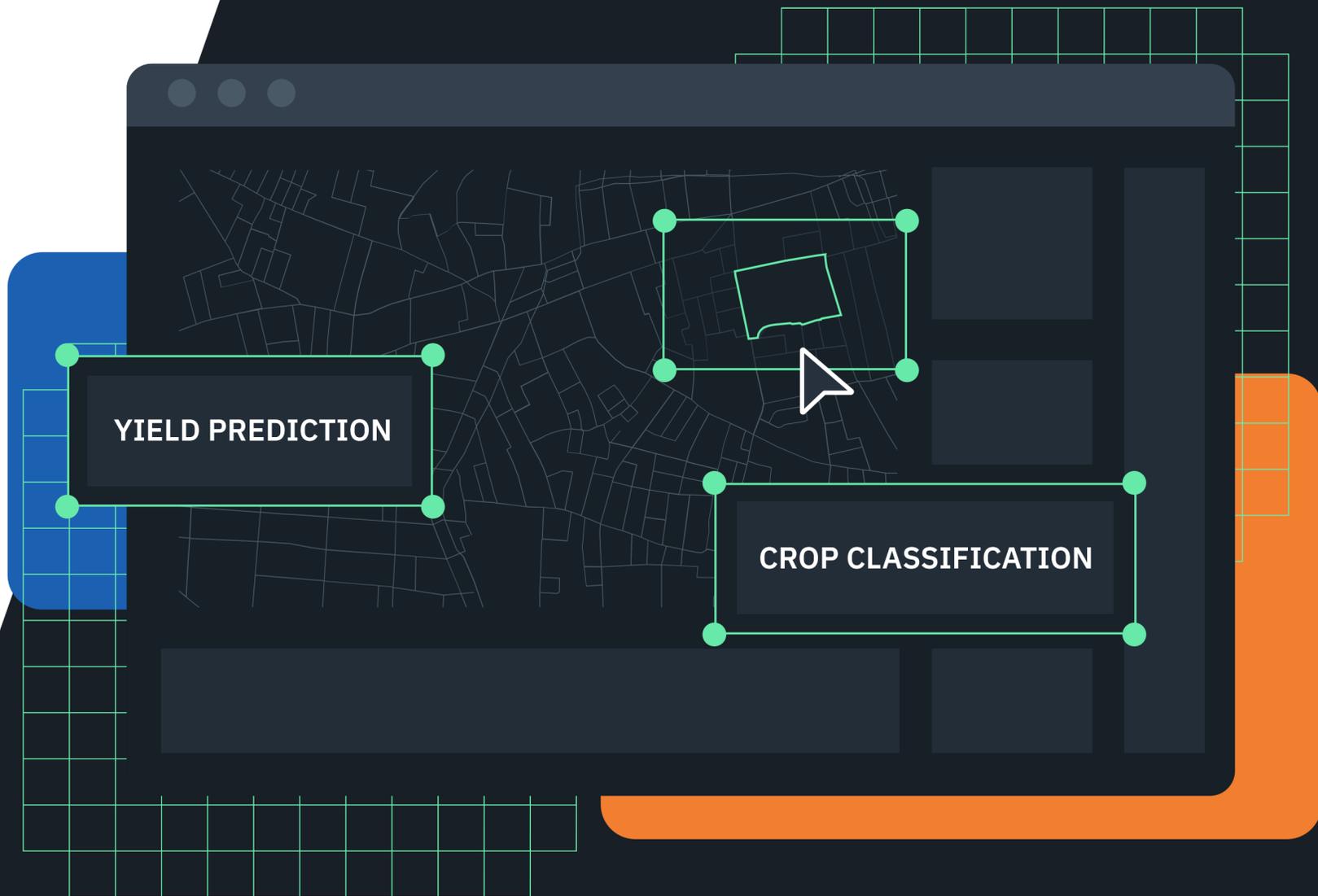
- ✓ All scouting activities can be easily managed both on the platform and in the specially developed mobile scouting app by EOSDA. Thanks to the team account feature, everyone involved in the process always stays connected. For example, when a field owner or an agronomist creates a new scout task in their account on the platform and assigns a scout to complete it, the scout is notified immediately if there's an online connection.
- ✓ The mobile scouting app is designed to help scouts in the field. Maps work offline so that the location of the task is visible to the scouts at all times, guiding them to the problem area. Scouts can add snapshots made on the spot and all other necessary information to the instantly generated online report. Once the report is ready, the manager gets automatically notified of it via the shared account.

Team management

- ✓ Team management feature equips field owners with more effective tools of control over scouts and other employees. You can create your own Team account and assign different roles (access permission settings) to members:
Admins have the most access to features and fields on the platform.
Scouts can add fields and create tasks.
Observers have a more limited scope of abilities on the platform as decided by the Team Owner.

Custom solutions for insurers

EOSDA has years' worth of expertise in developing practical AI-powered solutions for agricultural purposes. You can request a solution that fits your particular case — and, thus, get a competitive edge over other players in the agro market.



Yield prediction

- ✓ The algorithm estimates the amount of crop that will be collected from specific fields based on the history of past yields. Input data includes but is not limited to growth stage information, temperatures, precipitation, and type of soil.
- ✓ The accuracy of estimates made 14 days prior to harvesting can reach up to 90% and usually depends on the quality and completeness of the data. Values for the predicted yield can be downloaded as .xlsx, .csv, and .shp files.
- ✓ You also get a detailed PDF or .docx yield prediction report containing the review of all the data used in the analysis to better understand the grounds for the proposed yield forecast.

Crop type classification

- ✓ Automatic identification of the type of crop growing within each field shown on the map. It is possible to create a crop classification map for a whole region, as large as a country. Our model is based on Sentinel-2 time-series images with a 10-m resolution and has an accuracy of up to 90%, depending on the quality and completeness of the data. Maps are provided as .geotiff and .shp files. You also get the data on crop rotation, land use, and acreage/hectarage for each separate field and their total area.

Field boundaries detection

- ✓ Automatic delineation of agricultural field outlines in the satellite image of an area of any size — from a couple of fields to a whole region. The retrieved field contours (boundaries) can be uploaded to some GIS software as a .shp file. Large numbers of fields can be thus mapped without the need for allocating large sums of money and resources to the process.

Harvest dynamics monitoring

- ✓ Remote estimation of the dates when each field of interest has been harvested either in this season or in the previous ones. We combine radar and optical satellite imagery from Sentinel-2 to construct time series and calculate the hectarage/acreage of fields with the recent sharp drop in vegetation index values.
- ✓ Estimated data values are available as .xlsx, .csv, and .shp files. You also get a PDF or .docx report stating the number of harvested fields, total hectarage/acreage, and other important data.

Soil moisture analytics

- ✓ Mapping of soil moisture levels within fields and farms. You can keep track of moisture levels in the soil within your area of interest thanks to a 1-2 day satellite revisit and study the historical data available since 2002. Our algorithm calculates soil moisture amount at the surface and root depth (up to 70 cm). Combined with a vegetation index value and relevant weather data, a soil moisture map can be used to remotely assess the state of crops within specific fields.

Land cover classification

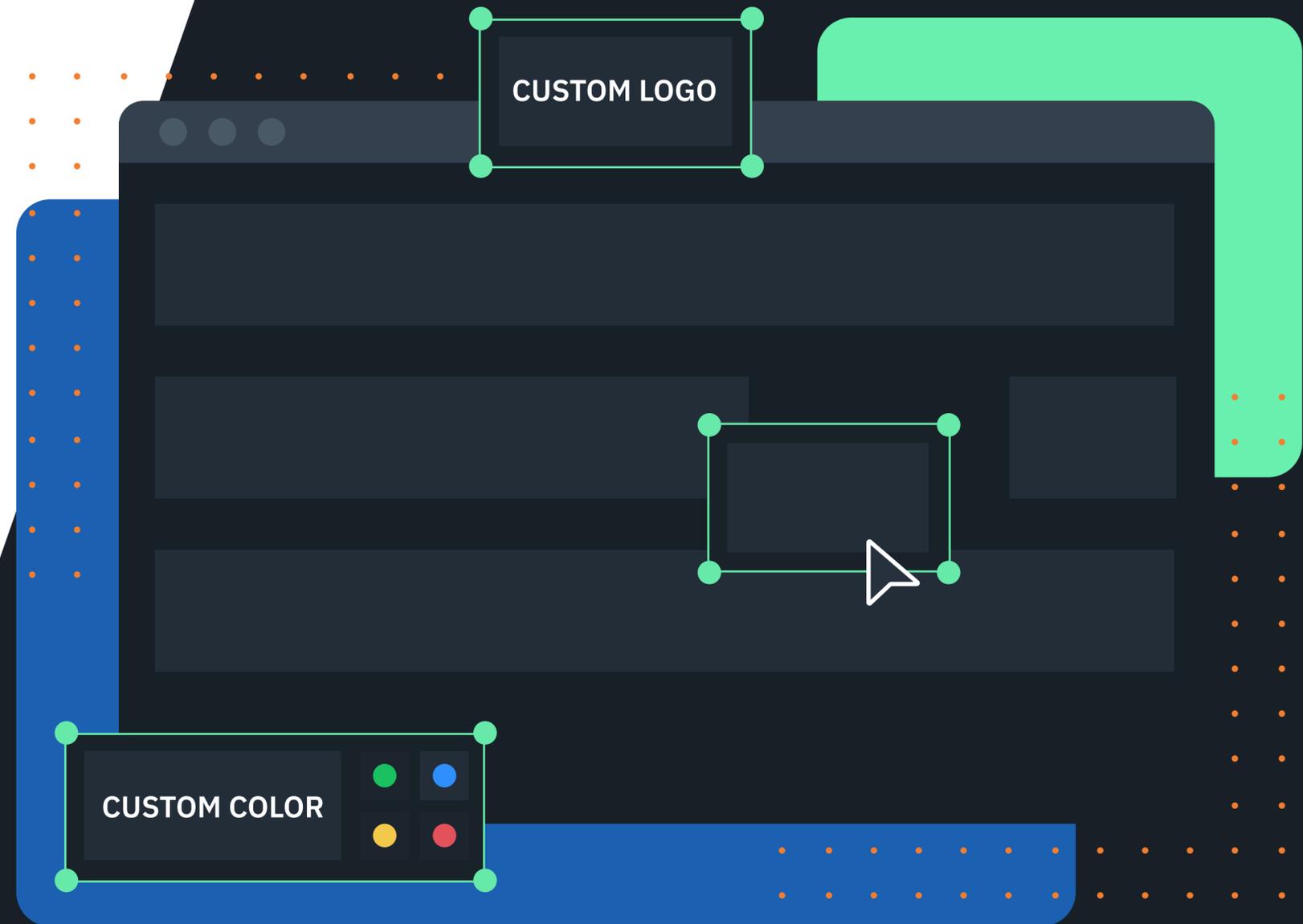
- ✓ A map that contains geospatial information about different types (classes) of landcover: forests, water, croplands, urban areas, swamplands, and more. The map can represent as many classes as necessary. The map can be used to assess the natural resources located within an administrative area on any scale (farm, region, country, etc.).

Soil type classification

- ✓ Soil type maps allow you to assess biophysical parameters of soil that have an impact on crop development. With these maps, you can assess the state of fields and predict the probability of soil degradation*.
*Accuracy of the prediction depends on the completeness of additionally provided data, e.g. are there any water objects nearby, what's the slope degree of the field surface, and so on.

EOSDA Crop Monitoring White Label

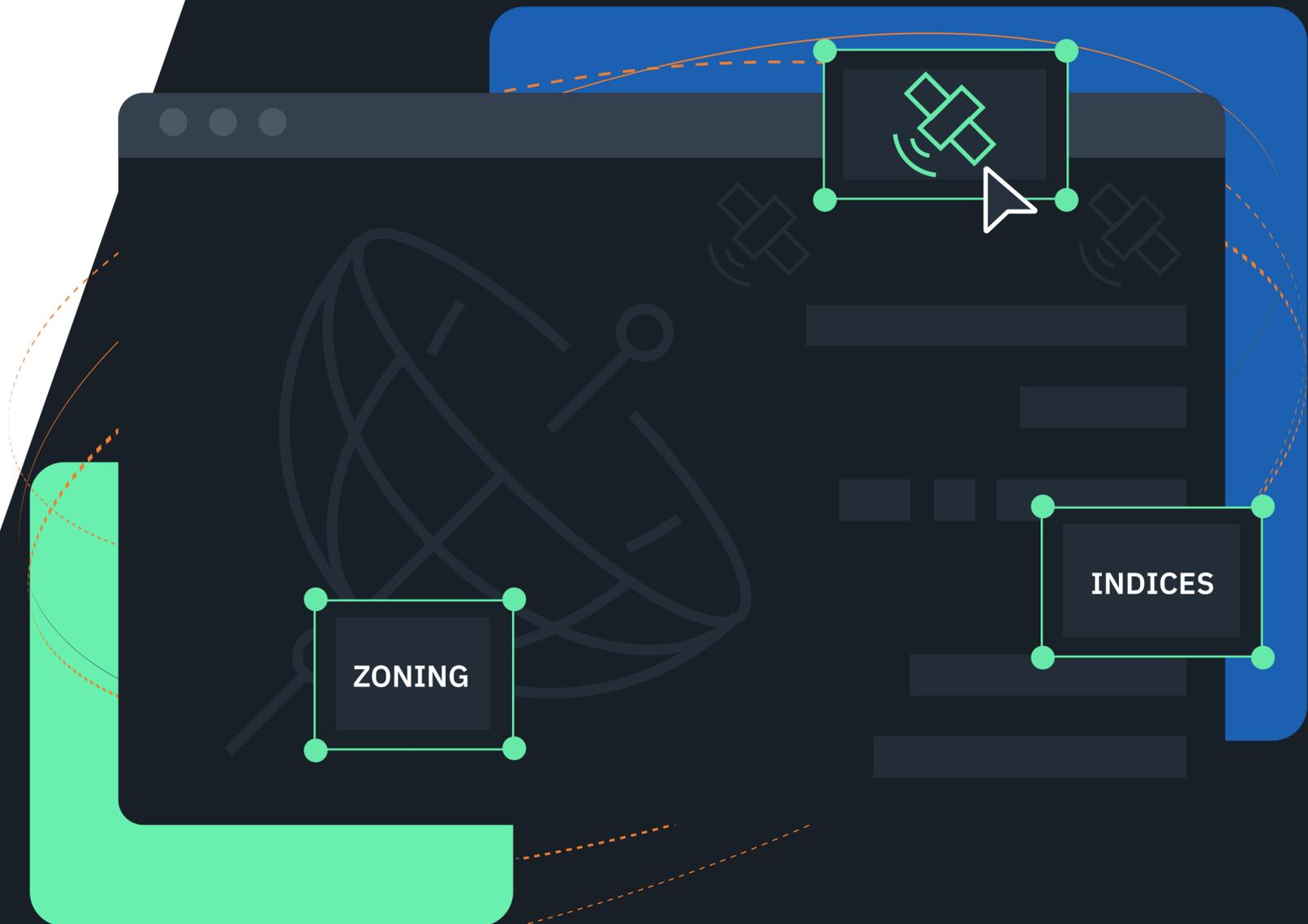
We offer a ready product created specifically for insurance companies as a White Label solution. You can use the platform on your own domain, under a logo of your choice, with color themes you prefer, along with other customizations. Also available is a Partner Management panel + a mobile app for crop scouting (Advanced WL option). You get to select the specific features you would like to be using. We will also assign a personal manager to assist you with every issue that might arise. The end result will be a fully customized product to answer your needs.



EOSDA Crop Monitoring API

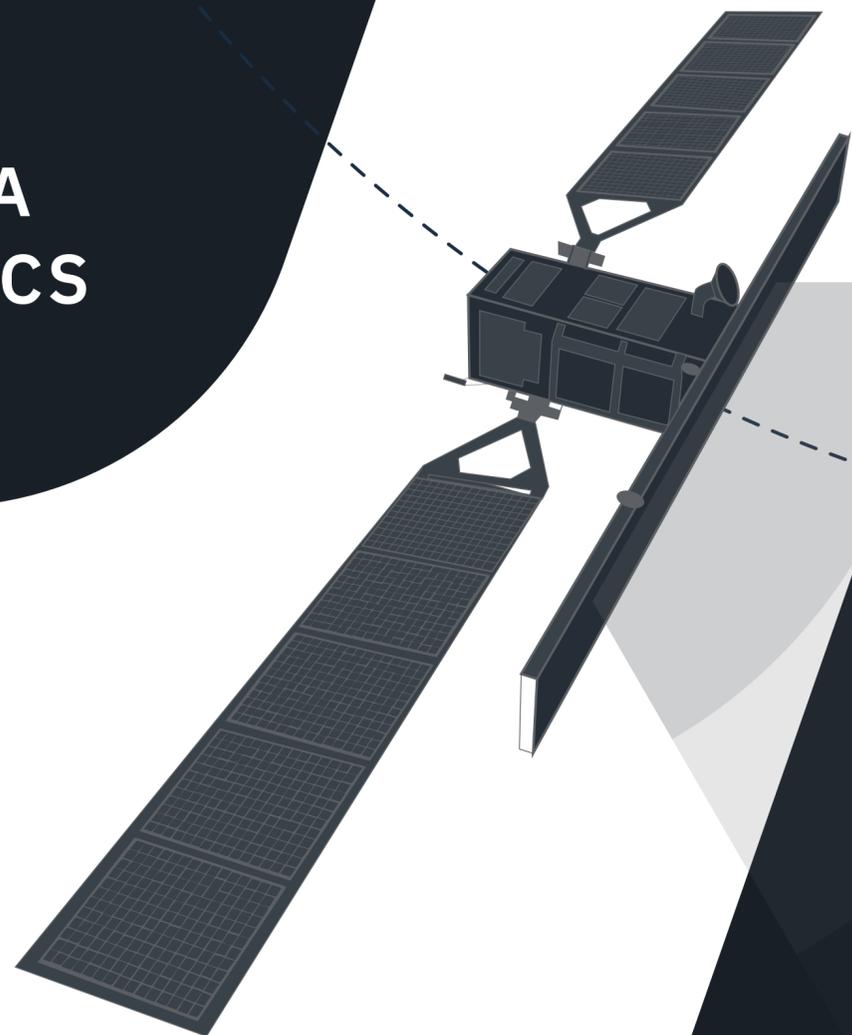
One of the services we offer for insurance institutions is our API Crop Monitoring documentation that provides access to data from regularly obtained satellite imagery, historical field and weather data archive, 14-day weather forecast, and more.

These features can easily be integrated into third-party software or website, including integrating EOSDA data in insurance management systems. The integration will add value to the software and the website alike.





**EOS DATA
ANALYTICS**



**950 000 users of
EOSDA products
globally**



**170K+ current
users of EOSDA
Crop Monitoring
worldwide**

Contact us — let our experts guide you!

CONTACT US



**At least one
registered user
from every country
on Earth**



**66 mln ha of fields
added to the
platform for
monitoring**