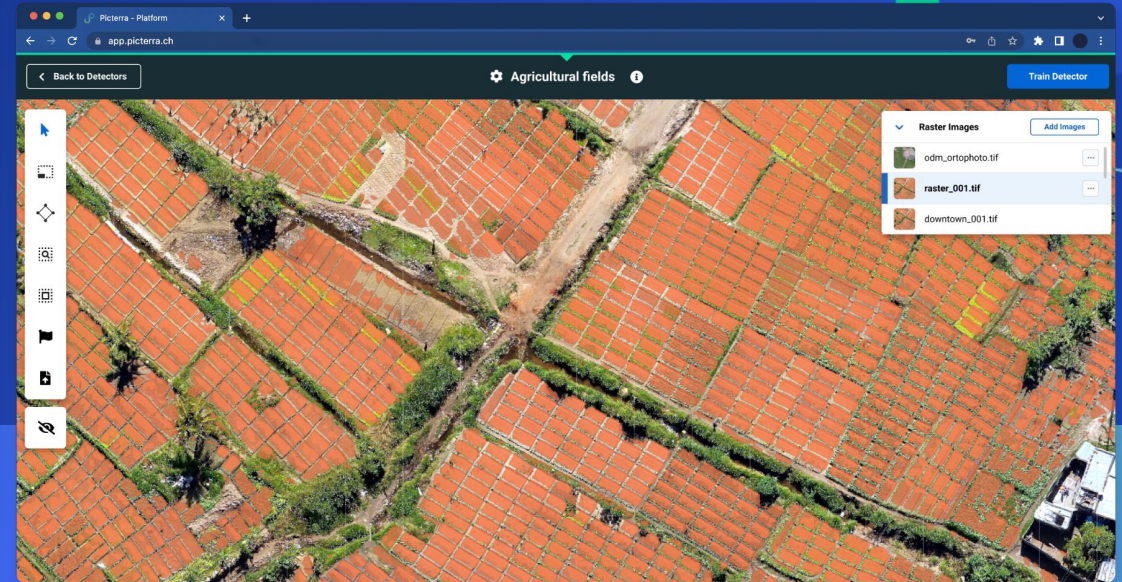
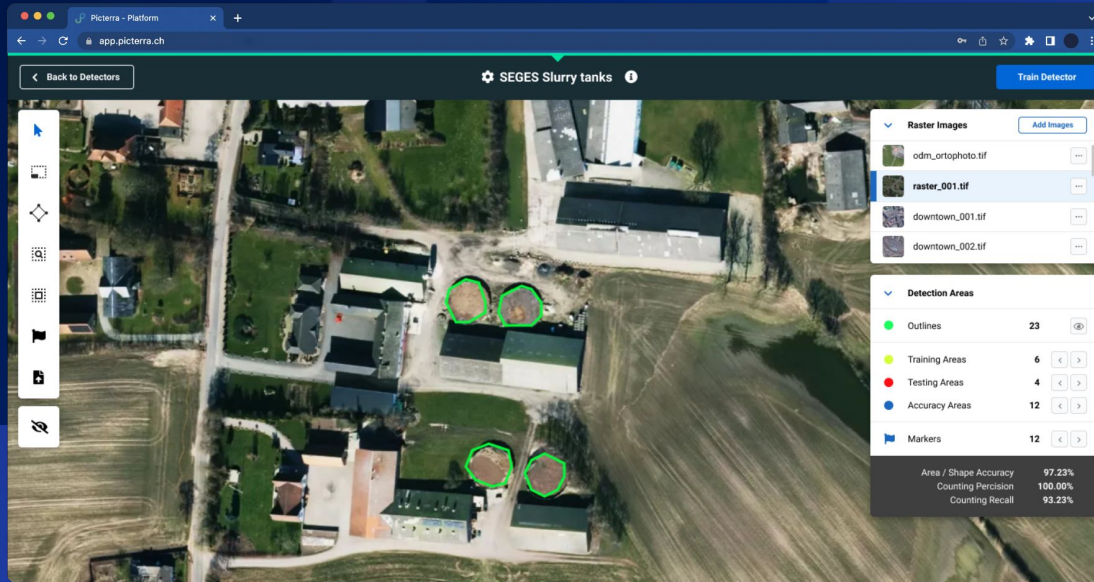




# How to scale your geospatial practice with Picterra cloud-based shared MLOps platform






Picterra

Platform overview  
Key features



Log in

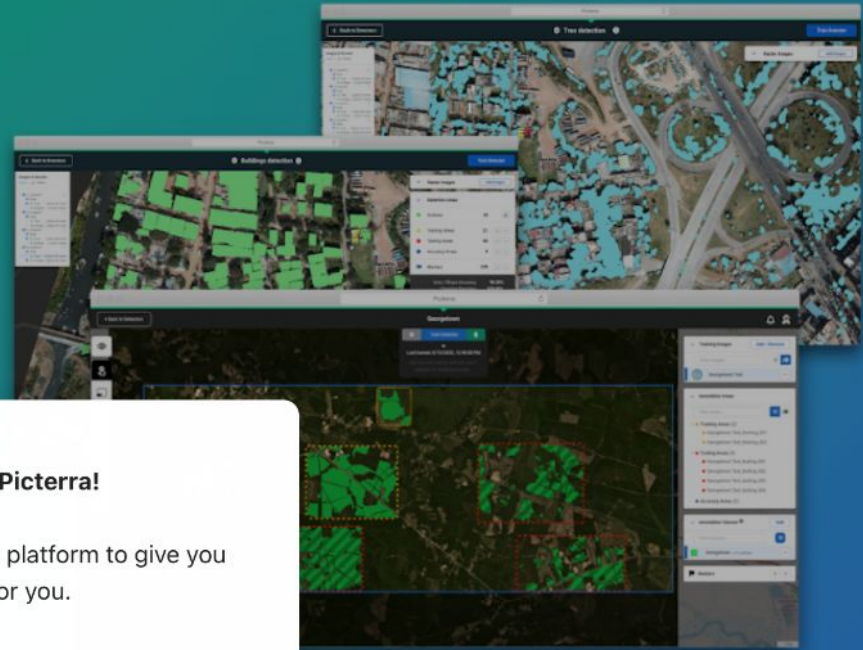
Or sign in with a provider

 Sign In with Google

By logging in, you accept our [Terms and Conditions](#) and [Privacy Policy](#)

Don't have an account? [Get started](#)

Forgot your password ? [Reset it](#)



Welcome to the **interactive demo of Picterra!**

In this 3-minute demo, we'll show you around the platform to give you a glimpse of what Picterra can do for you.

[Explore demo](#)

## Powering scalable geospatial applications & services with machine learning

Train, deploy and manage geospatial ML models faster than ever before with MLOps.

# Explore Picterra platform in an **interactive tour**

# Unlock the value of your EO images library with the power of machine learning



## Stay organized

- Bring your Earth Observation image libraries together, regardless of file type or where it lives



## Scale fast

- Build once & apply to unlimited data sets
- Share detectors across the company



## Manage costs

- Recycle models for future projects
- Run low-risk experiments to test ideas
- Use as base for new detectors



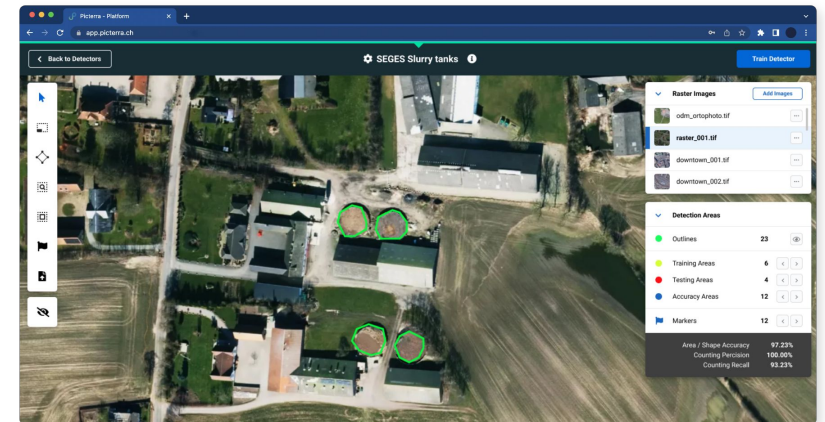
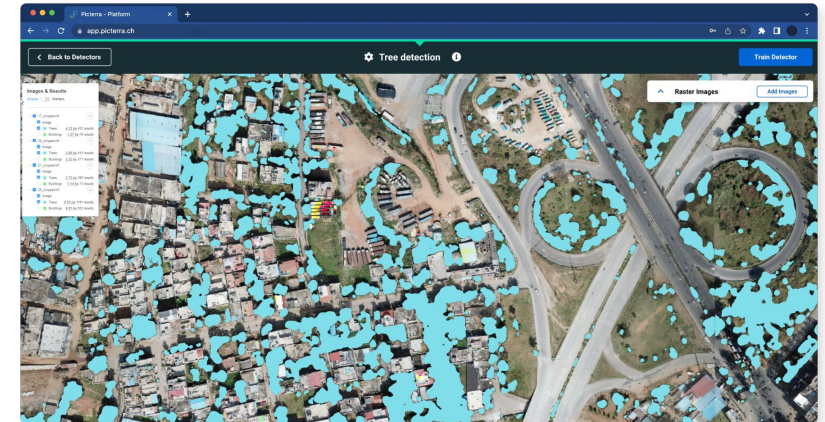
## Enable transparency

- Consistently and automatically track how the model learned and the inputs it used



## Assure accuracy

- Computer vision is now better than human vision
- Precise polygonal boundaries
- Minimize human bias



# Autonomously **create & deploy custom models** to fit your needs



*How many carbon credits will be harvested?*

**Director  
Forest & Land Acquisition**

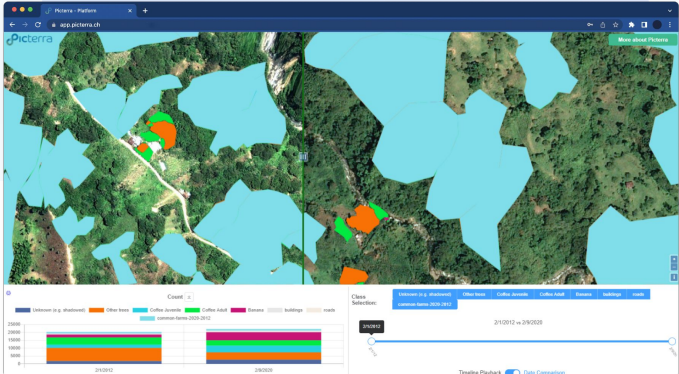
Carbon credit farming firm



*Are the reported vehicle counts correct?*

**Director  
Audit Services**

Fortune 500 manufacturer



*Are farmers growing coffee in a biodiversity scheme?*

**Vice President  
Sustainability**

Global FMCG company

# No - code model development & training UI with automated infrastructure scaling for **instant production**



Easy to access web UI for no-code ML model training



Import of existing data through the API & advanced detector settings



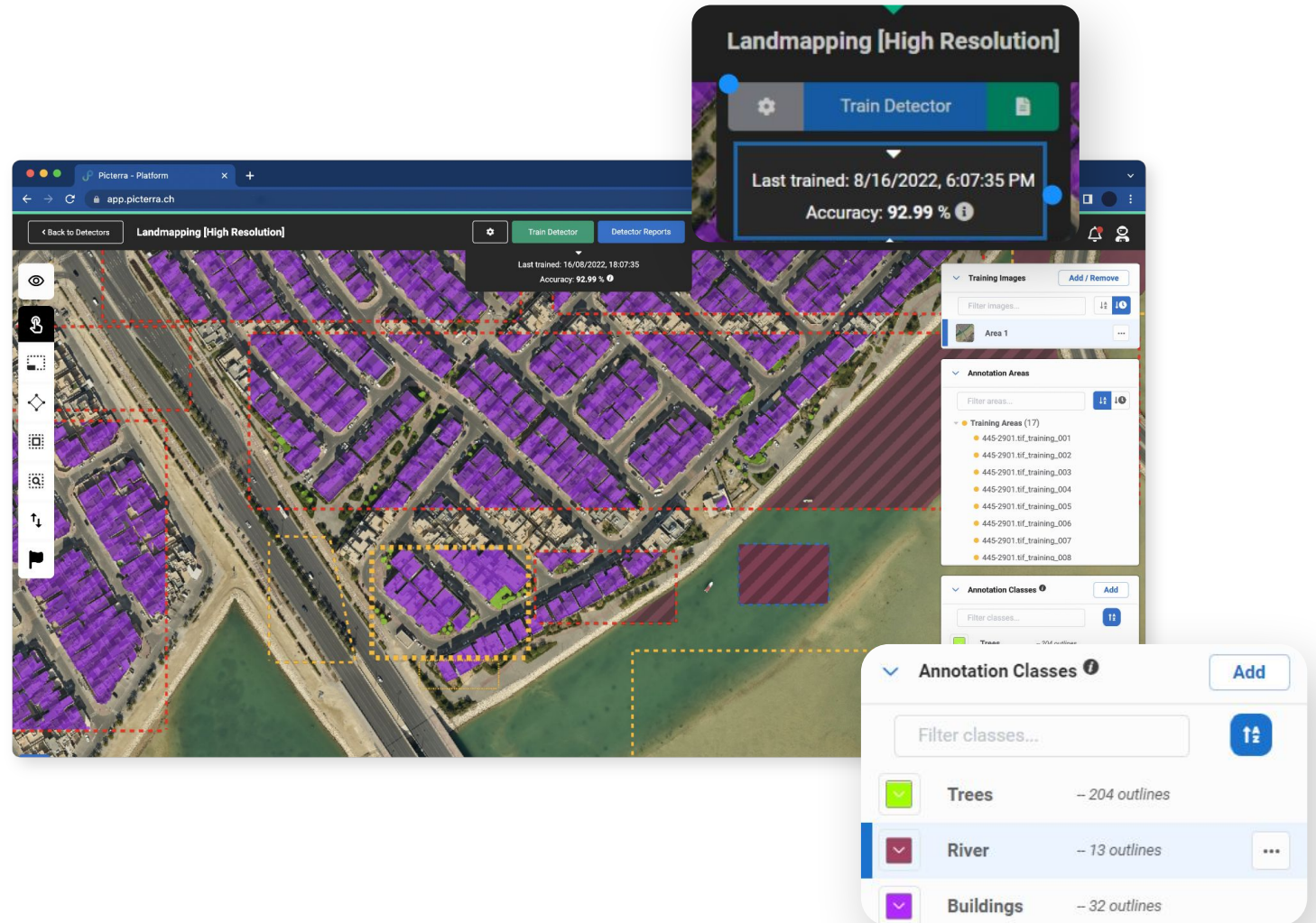
Custom Deep Learning architecture optimized for geospatial imagery



Up to 10 classes in a single detector (instance & semantic segmentation)



Fully automated production deployment of models



# Combine deep learning expertise with operational know how thanks to real-time in-platform collaboration & model explainability



Manage users & access permissions



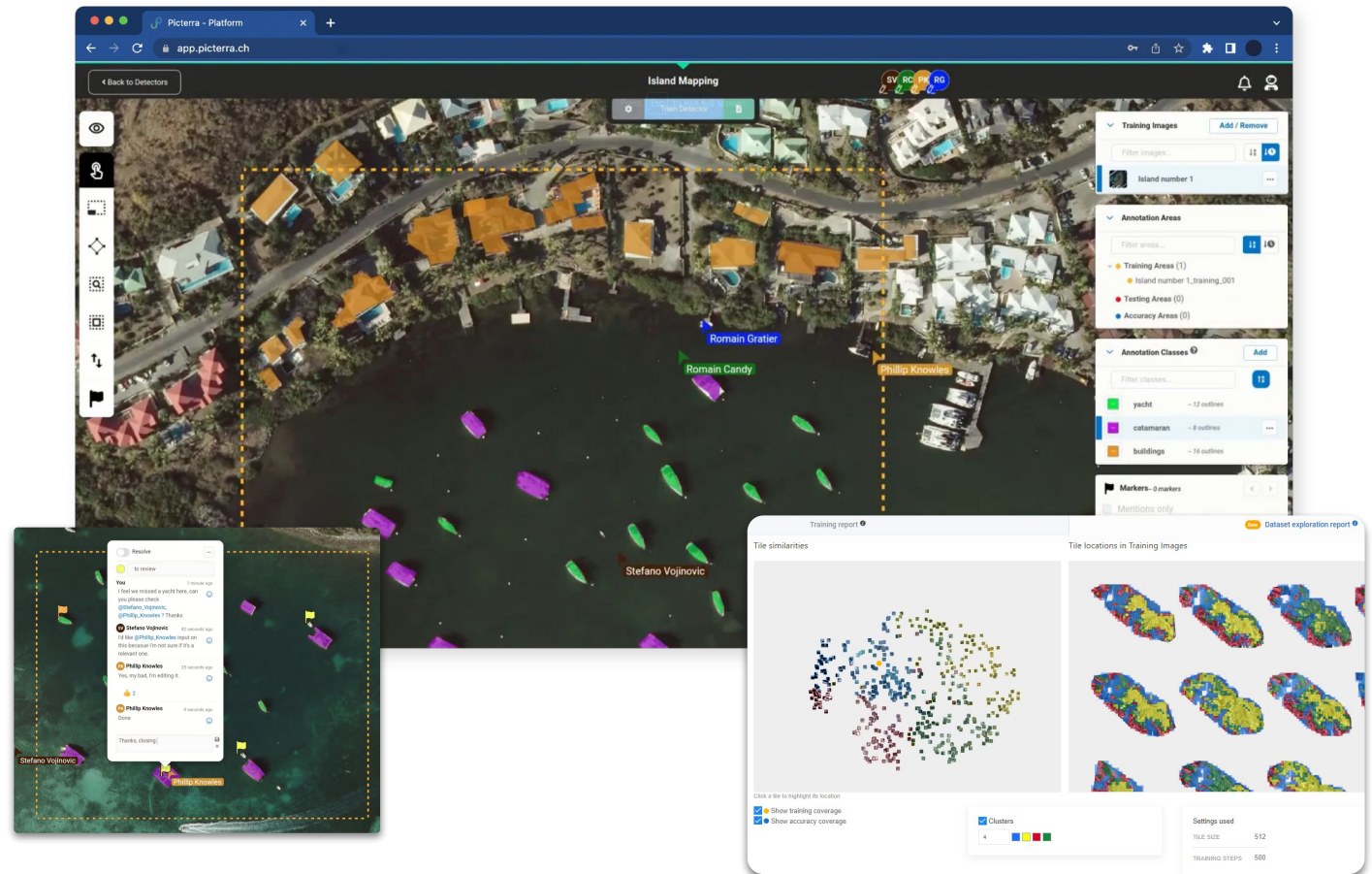
Enable multiple users to simultaneously access & edit detectors



Access live chat in comments threads directly in the project



Explainable & interpretable AI bringing robustness & efficiency in production



# Why **real-time in platform collaboration?**

---

Collaborate within the organization to speed up annotations & achieve high accuracy by:



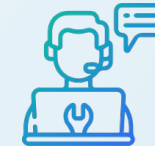
**Increase team efficiency** by splitting the work & save time



**Improve quality & accuracy** of the models thanks to collaborative iterations



**Put more projects into production** and effectively distribute & maintain workloads overtime



**Assure feedback of the subject expert** & bring different skills into the project



# Boost models accuracy & quality with innovative data curation and model analysis tools

Reveal visual patterns in your data and benefit from a guidance on training improvements with **unique Dataset Recommendation** report to effectively improve the accuracy of models:



Identify unrepresented parts of the dataset to re-train the model



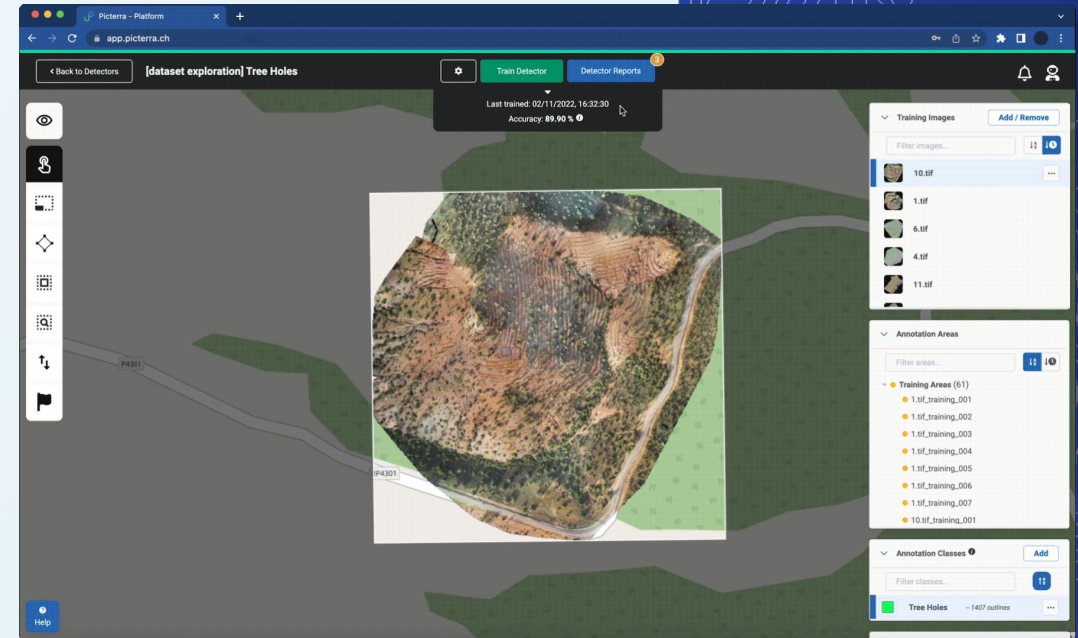
Remove redundant training areas



Reduce chance of false positives by adding more training areas in representative parts of the dataset



Explainable & interpretable AI bringing robustness & efficiency in production



# Why **data exploration & recommendation tools**?

---

Reveal & assess visual patterns in users data & improve accuracy of the models by:



## **Quickly assessing training areas coverage & their distribution** -

ensuring that annotation efforts focus on the dataset's most impactful & representative images/regions



## **Identifying unrepresented parts of the dataset & recommendation in training areas distribution** to efficiently

determine where to focus future iterations & re-training of the detector



**Improving dataset quality** by making sure the data covers variety of contexts in which the objects of interest appear



**Making sure the validation set covers the variety of the dataset** & validation score is more representative of how well the model will perform in production on new data

### Generate a dataset recommendation report

Generate a new dataset recommendation report

FAQs

A good detector is built on a dataset that covers the breadth of image content **variability in your data**.

This report is a tool to help you better understand that variability, **discover patterns** in your data, and get a sense of the robustness of your detector as well as where it may need improvement.

With the report, you will get some training **engine** that suggest the best training coverage recommendation markers will be re-generated.

The **Dataset Recommendation Report** is an industry-first innovation that helps users reveal visual patterns in their data and provides recommendations on additional training areas to improve model training coverage and in turn the accuracy of their detectors.

Check it out

### Dataset Recommendation Report

1/18/2023, 11:36:16 AM

#### Types of areas detected ⓘ



ing coverage

acy coverage

\* Areas smaller than the tile size will not be shown

Explore Dataset Recommendation feature with an **interactive tour**

# Improvements example

**Use case:** Reforestation  
Tree holes detection

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**64** **training areas** in the original dataset

---

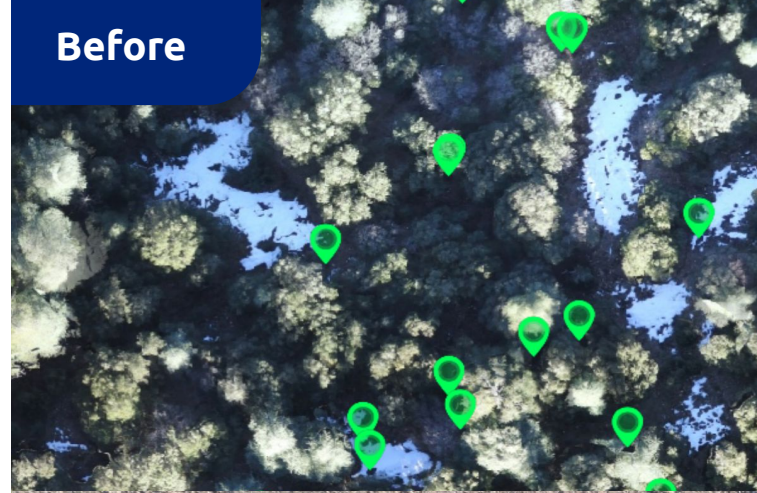
**20** **new training areas** added following the dataset recommendation guidance

---

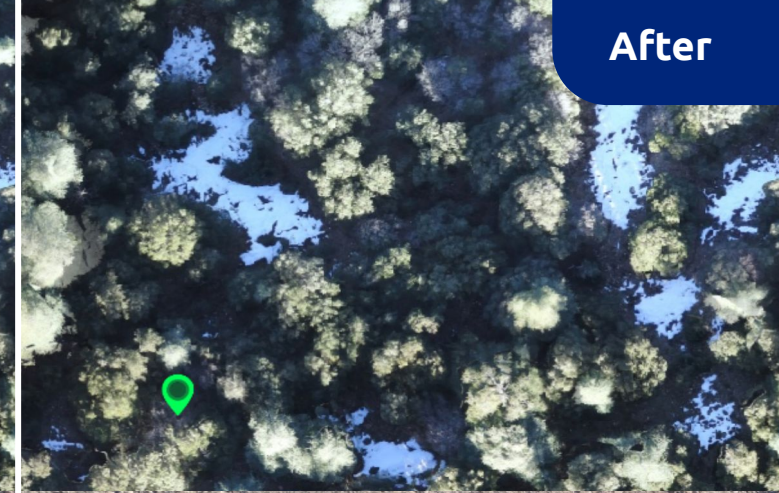
**10%** **accuracy score improvement** achieved

---

Before



After



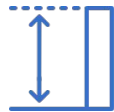
# Advanced tools to streamline GIS workflows

Streamline and simplify geospatial workflows with access to the most common GIS tools in just a few clicks directly in Picterra and build more accurate models by enriching them with diverse data.



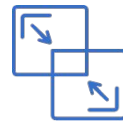
## NDVI

Creates a false color image representing the normalized difference vegetation index



## DSM Height Extraction

Adds mean, minimum and maximum elevations to a vectorlayer based on DSM data



## Image stacking

Combines two images into a single image, keeping the bands from both

# Why **advanced tools**?

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Streamline & simplify your workflow - do all in one platform. No need to jump between multiple tools to combine different geospatial information to give to your ML model or to enrich your results.

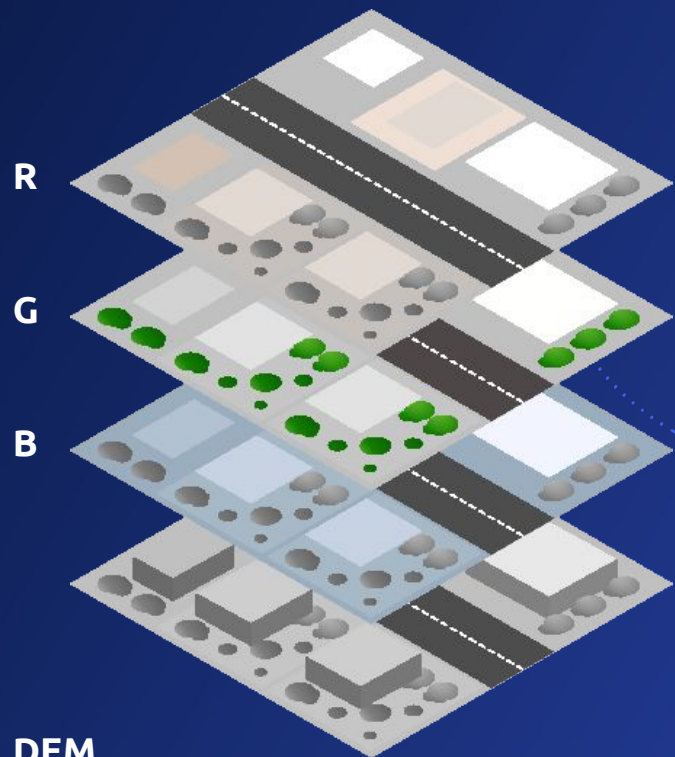


Build more accurate, “better informed” models by enriching them with more diverse data.

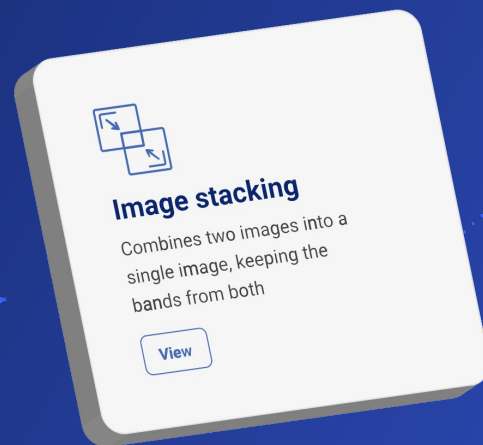


Avoid complexity and save time by performing most frequent steps of geospatial workflow with just a few clicks directly in Picterra.

# Image stacking



**DEM**  
Digital Elevation Model



## Image stacking

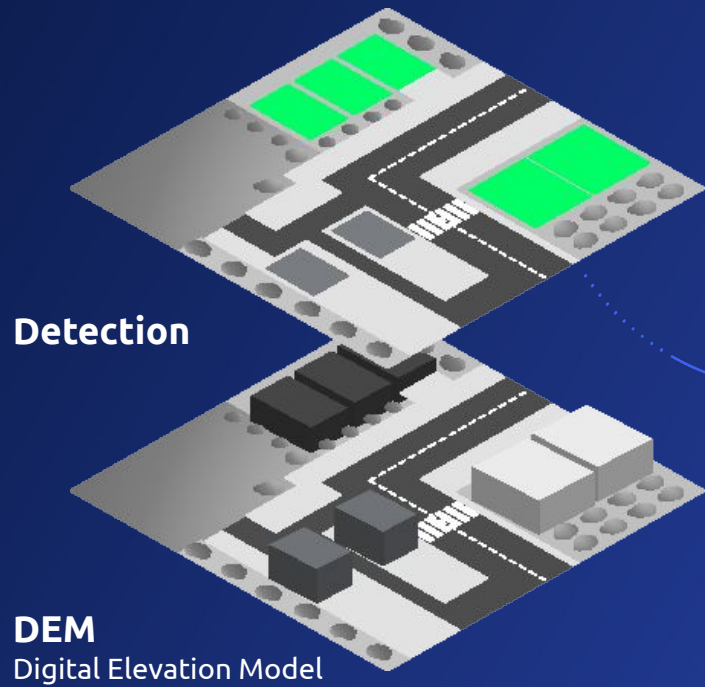
Combines two images into a single image, keeping the bands from both



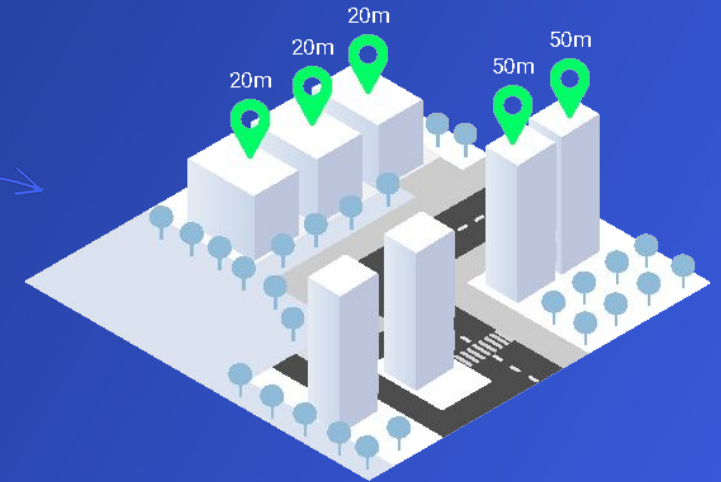
## Composite image

containing color data and elevation data

# DSM height extraction

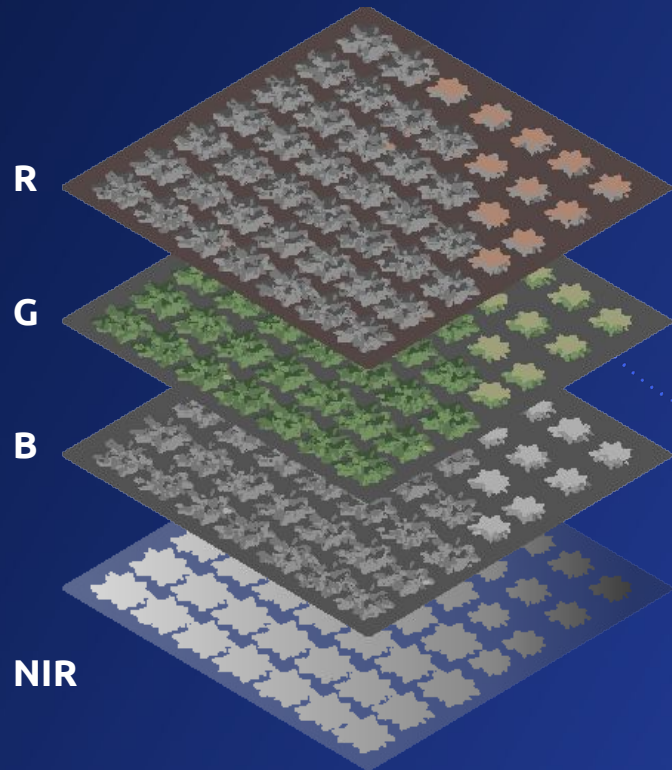


**DSM height extraction**  
Adds mean, minimum and maximum elevations to a vector layer based on DSM data.





# NDVI



## NDVI

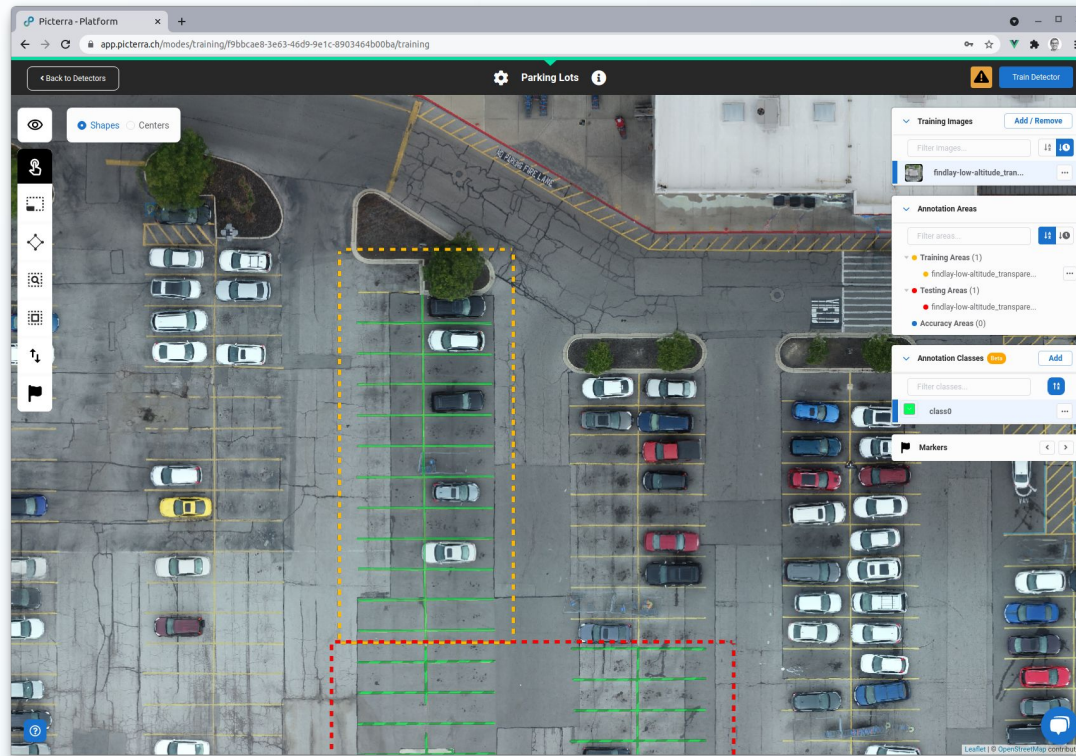
Creates a false color image representing the normalized difference vegetation index.

\*or other like water, snow, etc.



## False color NDVI image

# Easily access all platform features via **web UI** or **API**



UI

```
from picterra import APIClient

# Replace this with the id of one of your detectors
detector_id = 'd552605b-6972-4a68-8d51-91e6cb531c24'
# Replace this with the id of a folder in which the
# raster should be uploaded.
folder_id = '63207fe9-32b8-410f-a72d-00803cca7bf3'

# Set the PICTERRA_API_KEY environment variable to define your API key
client = APIClient()
print('Uploading raster...')
raster_id = client.upload_raster(
    'data/raster1.tif',
    name='a nice raster',
    folder_id=folder_id,
    captured_at='2020-01-01T12:34:45.789Z'
)
print('Upload finished, starting detector...')
result_id = client.run_detector(detector_id, raster_id)
client.download_result_to_feature_collection(result_id, 'result.geojson')
print('Detection finished, results are in result.geojson')
```

API

# Personalized user dashboard

The dashboard for user 'Mark' features a top navigation bar with 'Dashboard', 'Projects', and 'Detectors'. A 'Hello, Mark!' greeting is followed by tabs for 'Favourites' and 'Detector Activities'. The main content is divided into two columns. The left column, outlined in green, contains 'Favourite Detectors' and 'Favourite Projects'. 'Favourite Detectors' includes cards for 'coffee\_banana [rec-test]', 'hayward solar panels', 'Tree plantation holes', 'railway lines', '10 TRUCKS', and 'Deforestation monitoring'. 'Favourite Projects' lists 'Sample project', 'Water bodies detection', 'Deforestation monitoring', 'Tree counting', 'Weed localization', and 'Mine monitoring'. The right column, outlined in blue, shows 'Notifications' with sub-tabs for 'Activities' and 'Mentions', displaying a list of recent system messages. A bottom navigation bar contains buttons for 'New feature Dataset Recommendation', 'New feature Advance Tools', 'Discover Collaboration', and 'Features View All'.

Favourite detectors

Favourite projects

New features

User activities

The dashboard for user 'Mark' features a top navigation bar with 'Dashboard', 'Projects', and 'Detectors'. A 'Hello, Mark!' greeting is followed by tabs for 'Favourites' and 'Detector Activities'. The main content is divided into two columns. The left column, outlined in green, contains 'Recently Trained Detectors' and 'Recent Detections'. 'Recently Trained Detectors' includes cards for 'Island mapping - boat detecting', 'coffee\_banana [rec-test]', 'SG\_Palm Trees detector', 'hayward solar panels', 'Tree plantation holes', and 'Road cracks detector'. 'Recent Detections' is a table with columns for 'Detector', 'Class', and 'Date', listing various detection events. The right column, outlined in blue, shows 'Notifications' with sub-tabs for 'Activities' and 'Mentions', displaying a list of recent system messages. A bottom navigation bar contains buttons for 'New feature Dataset Recommendation', 'New feature Advance Tools', 'Discover Collaboration', and 'Features View All'.

Recently trained detectors

Recent detections

Mentions

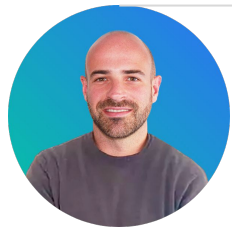
# Integrate Picterra with other GIS softwares or custom dashboards

## Example: **Picterra ArcGIS integration**



# Esri Silver Partner & ArcGIS Marketplace Provider

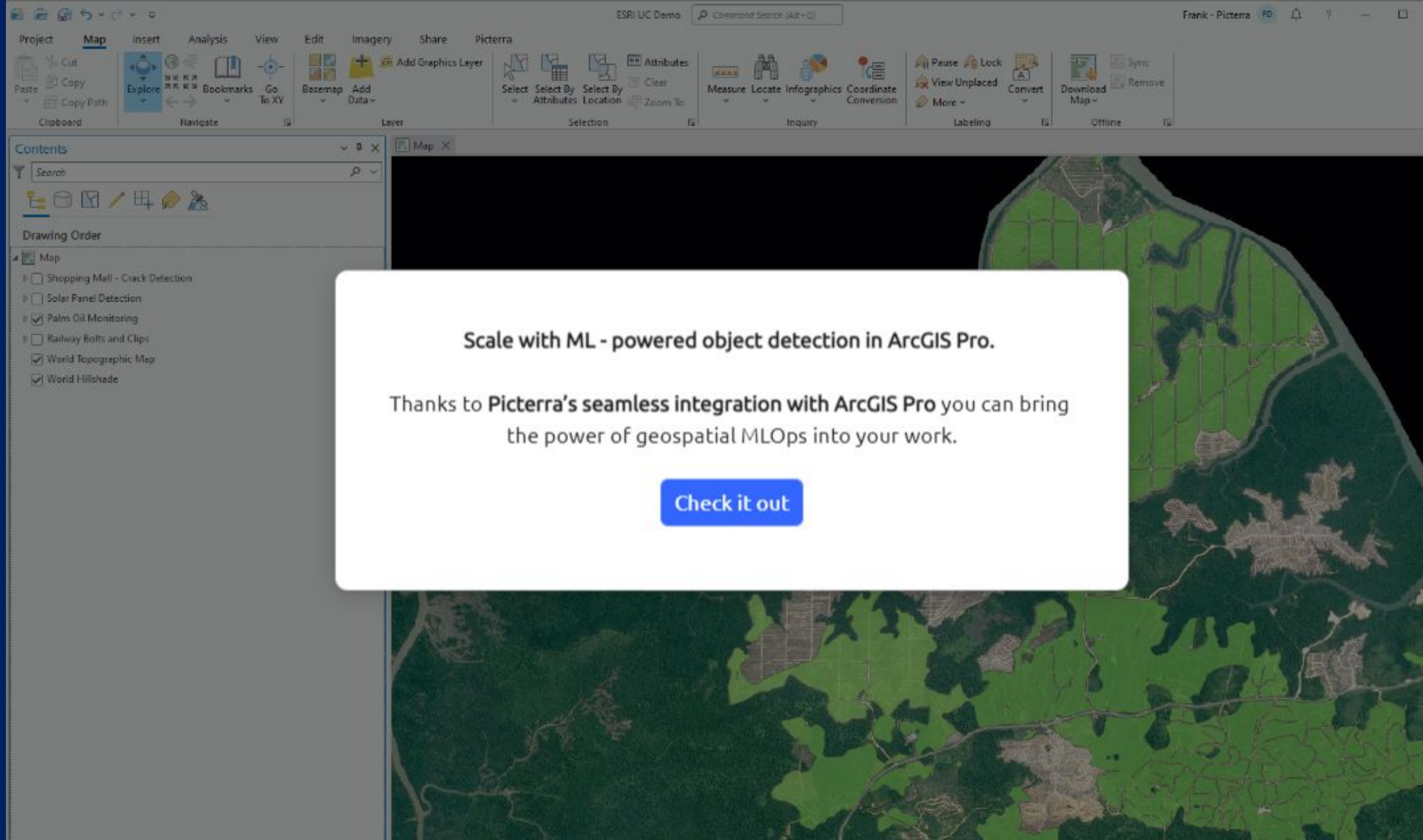
*“Being a part of the Esri Partner Network ecosystem is a strategic milestone for Picterra. Through our integration, ArcGIS Pro users can leverage the power of Picterra’s machine learning capabilities, with contextual tools to visualize and analyze data provided by Esri ArcGIS software”*



**Pierrick Poulenas**  
CEO & CO-Founder, Picterra



ArcGIS Marketplace  
Provider



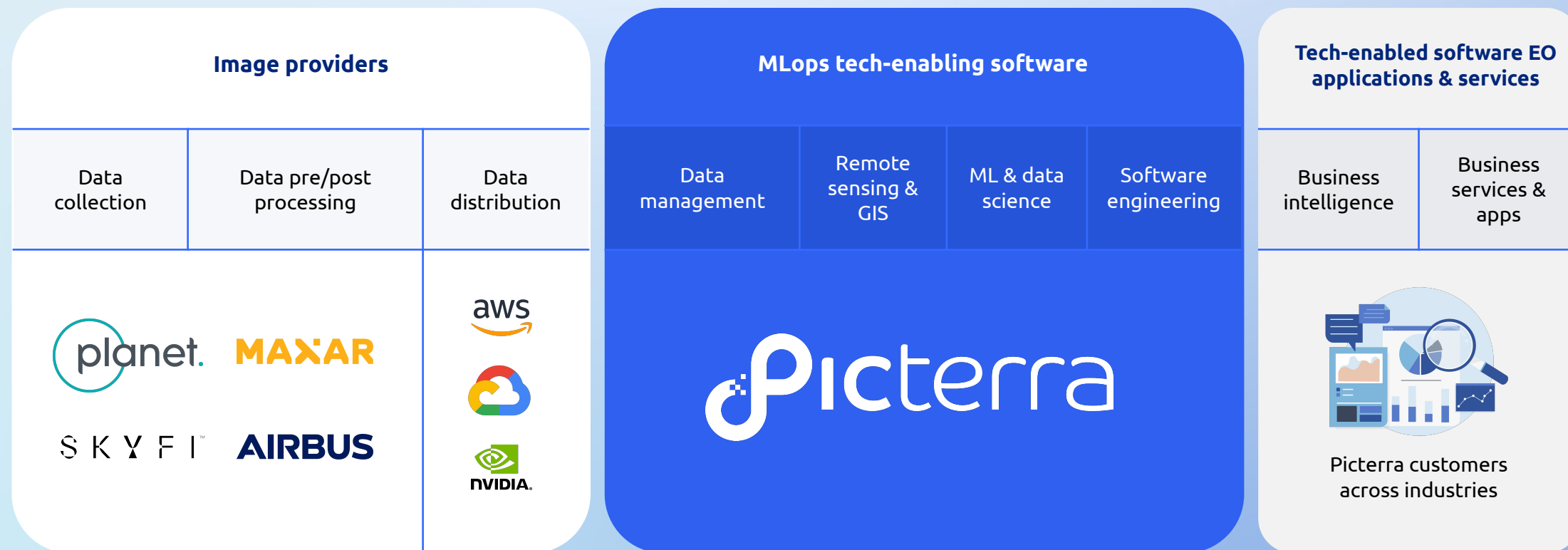
Explore Picterra ArcGIS add-in with an **interactive tour**

Picterra

Other

# Harness the transformative **power of MLOps**

Upstream → Midstream → Downstream





# Explore Picterra **use cases** in demo gallery

Discover how Picterra was applied to deliver the variety of solutions

[Demo gallery](#)

