Leveraging AI and Remote Sensing for Environmental Impact Assessment

Collaboration between Volkswagen ClimatePartner and Space4Good

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Collaboration
Partners

IAIA 25, Bologna

1.

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Space4Good

Providing geospatial solutions to unlock, accelerate and scale social and environmental impact for good

 Remote Sensing

 Geoinformation

 Artificial intelligence

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Volkswagen ClimatePartner

Advancing sustainable ecosystems.

We at Volkswagen ClimatePartner are carbon offset project developers working together with local partners in Europe, Africa, Asia, and South America.
We are a joint venture between Volkswagen Kraftwerk GmbH and ClimatePartner GmbH, founded in 2022.

We have offices in Munich (Germany) with employees of 10+ different nationalities. Our project developers are located in Nicaragua, Zimbabwe, Zambia, Indonesia and Brazil.

We develop and finance certified carbon offset projects which offset CO_2 emissions and contribute to sustainable development, offering tailor-made carbon offset projects around the world – according to the needs of our customers.

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Use Context

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2.

Volkswagen ClimatePartner's due diligence process

Initial screening and KYC checks on counterparties
Media and sanction screenings, review of official documentation of counterparty, etc.

1

Environmental Assessment
Impact on land, soil, water & air quality, Biodiversity contributions, water and forest fire risks, climate change adaptability, etc.

4

Legal compliance
Land title review, ESIA requirements, required permits and other legislation

2

Social Assessment
Stakeholder engagement, FPIC, benefit-sharing, labour, health & safety, gender, etc.

5

Regulatory compliance
Baseline review, carbon accounting, additionality, non-permanence risk, geospatial review, etc.

3

SDG and Impact Assessment
Plausibility check of SDG descriptions and calculations

6

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Why did we choose this platform?

Data Availability

High dependency on freely available moderate to coarse resolution data which often has uncertainty concerns and is thereby losing popularity (thus methodologies are moving away from)

Time availability

High workflow for the Earth Observation Team which is manual, time intensive and done by a small team.

Verifiability

Verifiable system that provides verifiable results upon demand/request needed

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Space4Good Platform – Deep Dive

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2.

Platform showcase

Input

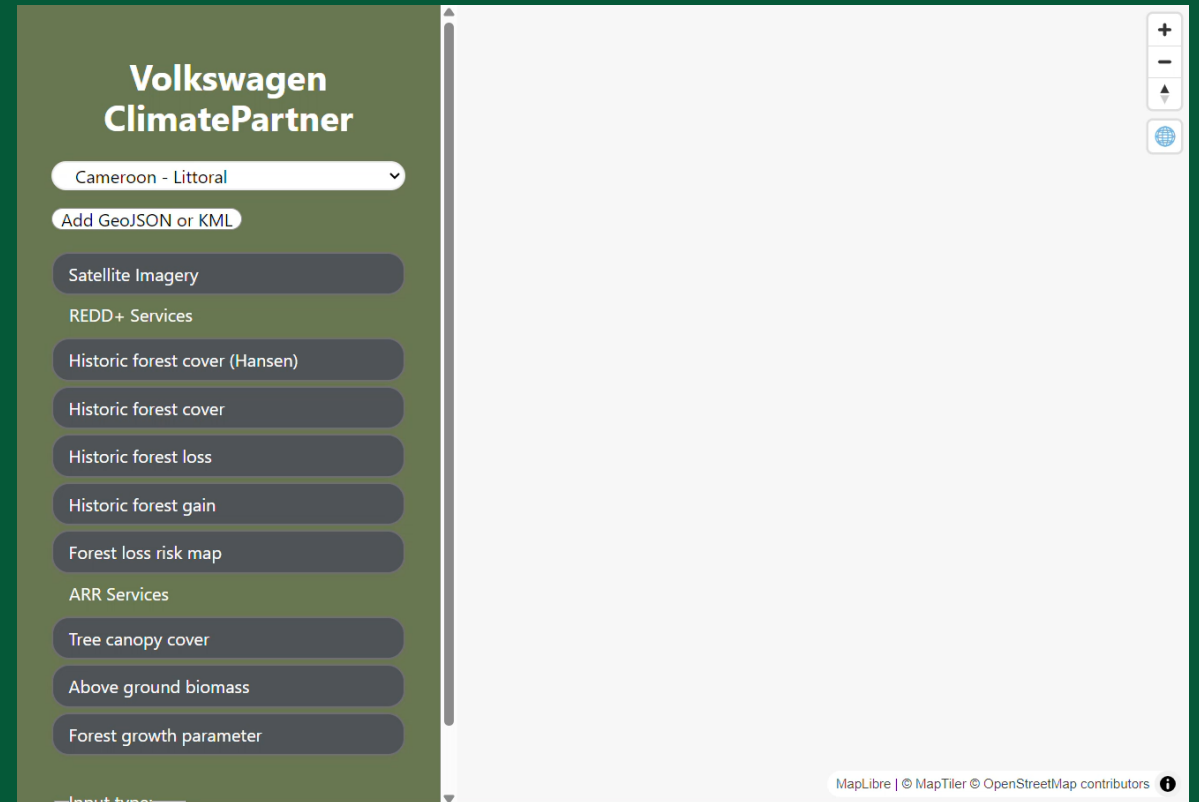User uploads a shapefile to define the area of interest

Visualize and Bespoke Insights

Map displays forest loss and gain, risk, canopy cover, biomass, and other key layers for due diligence screening and monitoring. Users can explore trends over time.

Output

Automated statistics and summaries are generated. Users can export data and visual insights for internal reporting.

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Cameroon - Littoral

Add GeoJSON or KML

Satellite Imagery

REDD+ Services

Historic forest cover (Hansen)

Historic forest cover

Historic forest loss

Historic forest gain

Forest loss risk map

ARR Services

Tree canopy cover

Above ground biomass

Forest growth parameter

Input type:

MapLibre | © MapTiler © OpenStreetMap contributors

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Technology

1 **Satellite Observations**
Historical and regularly updated satellite data capturing surface reflectance and vegetation structure. (e.g. Sentinel, GEDI)

2 **ML Model Processing**
Advanced ML models combine the satellite spectral data and vegetation structure data into geospatial forest indicators.
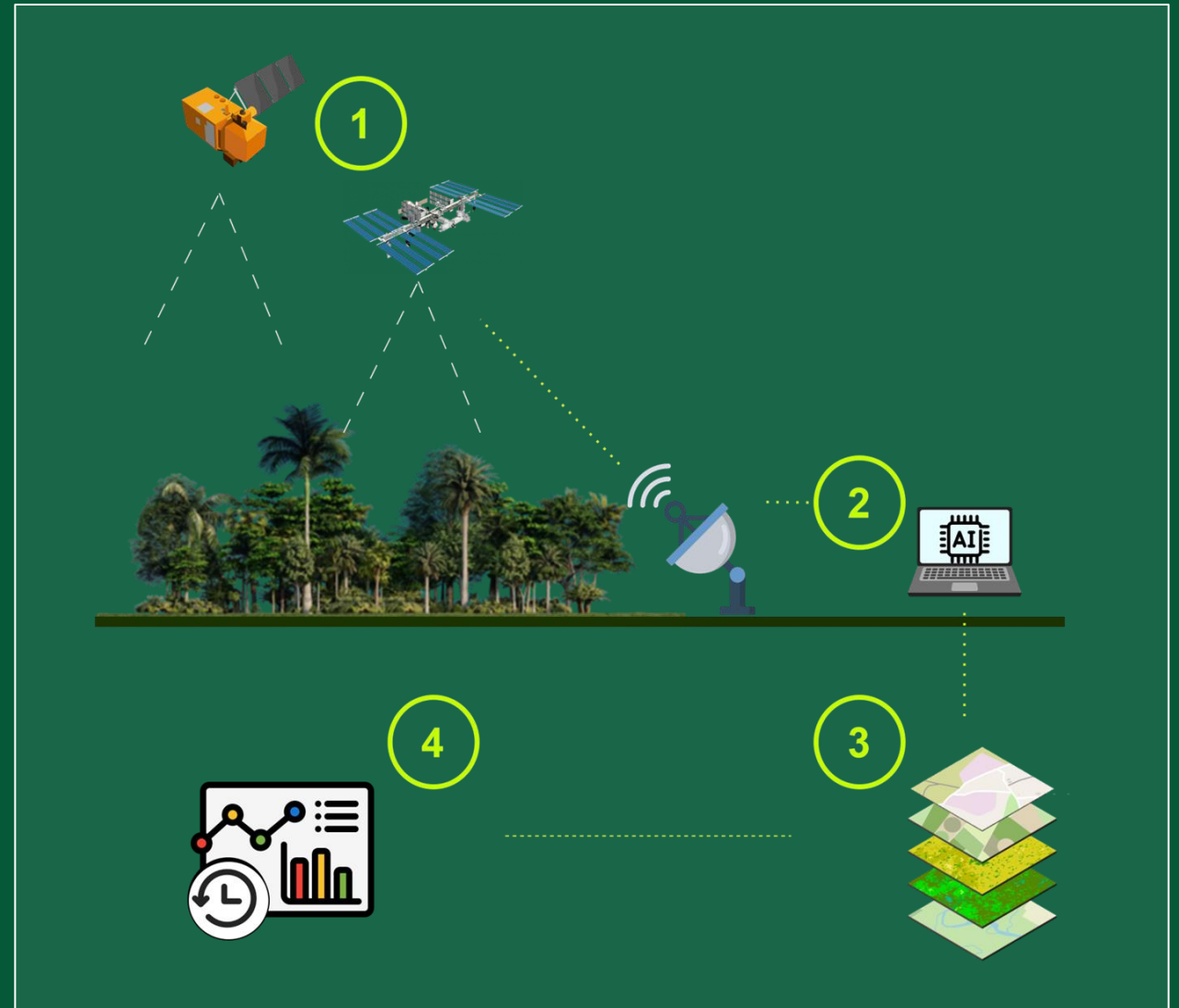
3 **Geospatial Layers**
Generation of high-resolution layers such as forest cover, canopy height, biomass, and tree density.

4 **Trend & Impact Analysis**
Detection of land use changes over time and assessment of the impact of carbon projects (e.g. conservation, afforestation).

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Thank you

Any questions?

Feel free to reach out!

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