



SWIFTGEOSPATIAL

Transforming data into knowledge

National Space Conference - 2023

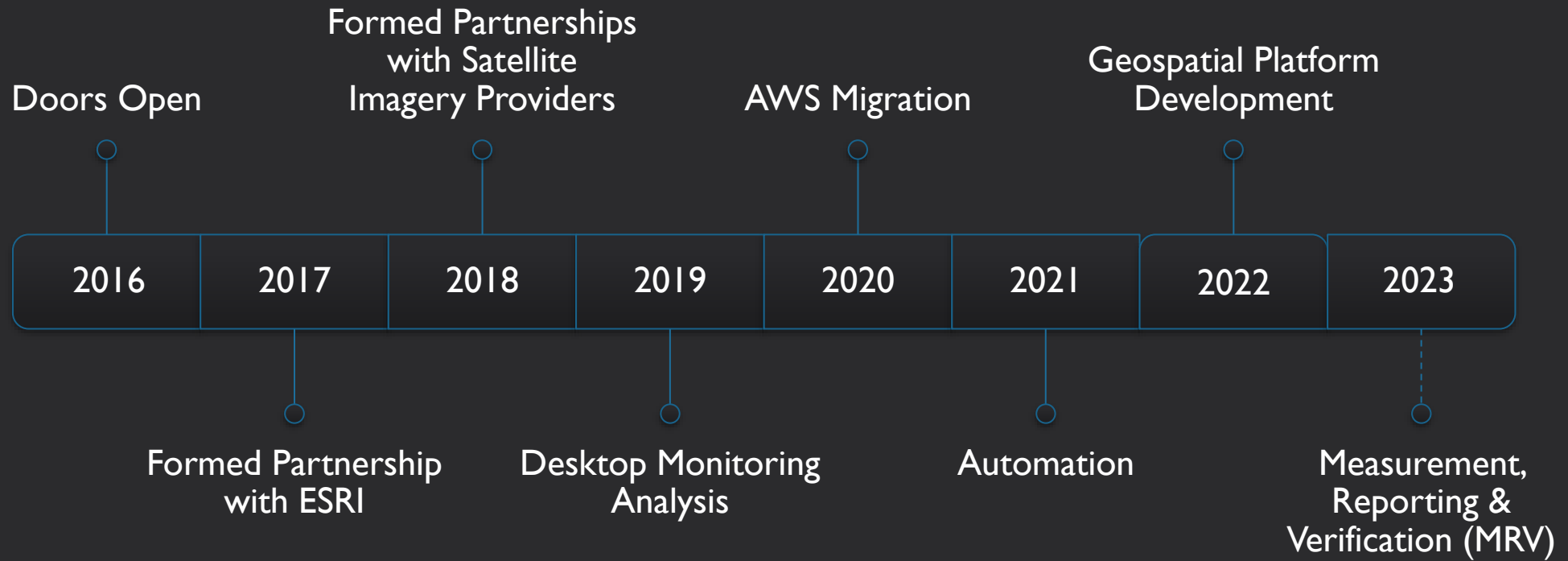
Unlocking Earth Observation Imagery to Provide Insight

Michael Breetzke – Business Development Manager

Presentation Content

- Company Introduction
- Market Verticals
- Partners
- Workflow
- Case Study

Swift Geospatial Journey



GIS and Remote Sensing Company



Physical Staff

- Based in Pretoria and Cape Town, South Africa
- 7 full-time staff
- 4 outsourced staff



Cloud Computing

- AWS environments based in Oregon USA, Frankfurt Germany and Cape Town South Africa
- 2 x dedicated imagery servers
- 1 x dedicated ESRI enterprise
- +/- 24 x dedicated EC2 cloud computing machines



Market Verticals

Forestry
(Natural &
Commercial)

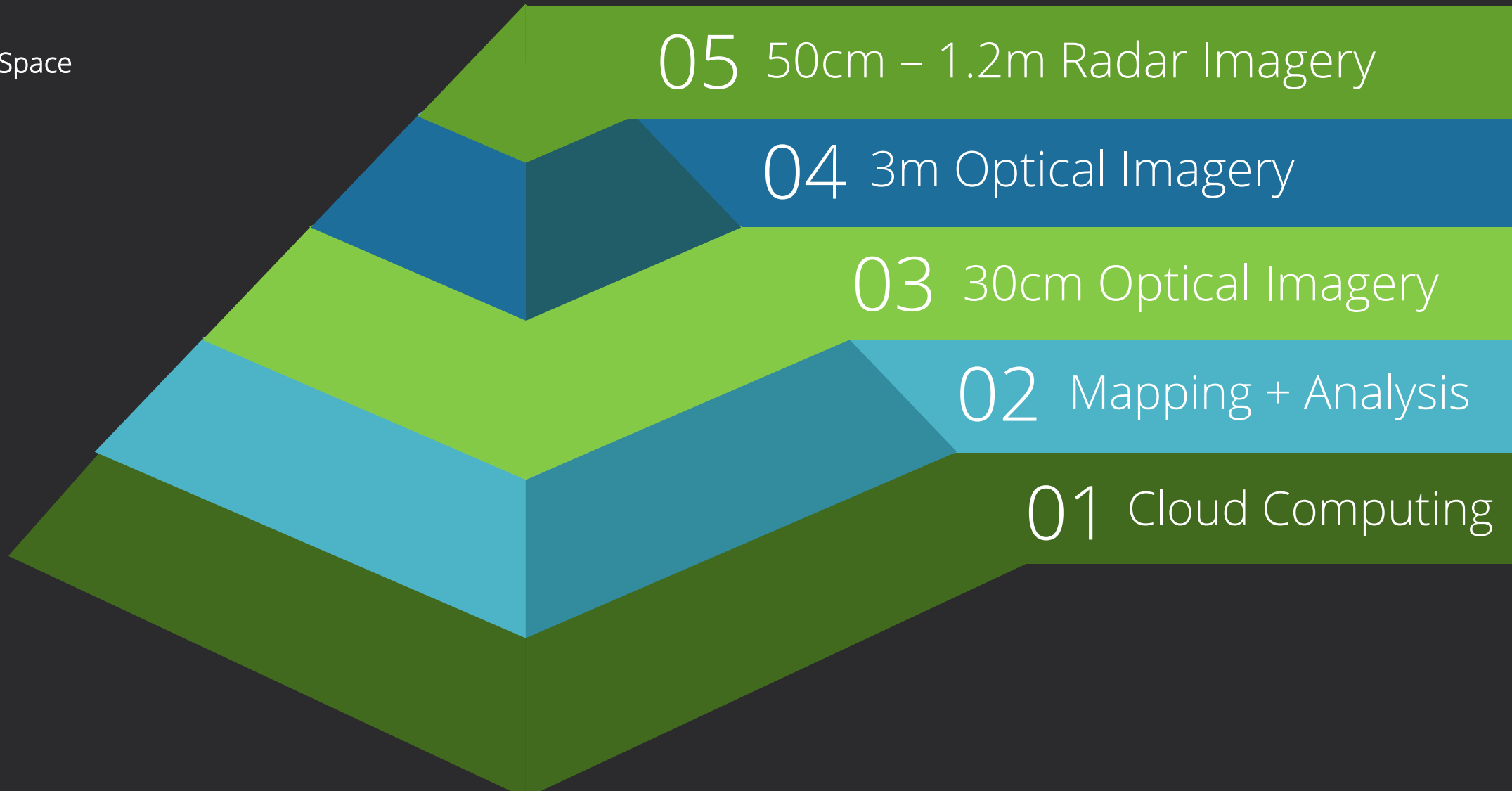
Agriculture

Sustainability
(ESG)

Mining

Partners

- Capella Space
- Planet
- Maxar
- ESRI
- AWS



Workflow



Raw Data

Baseline Creation

Ongoing Monitoring

Geospatial Platform

01 DATA

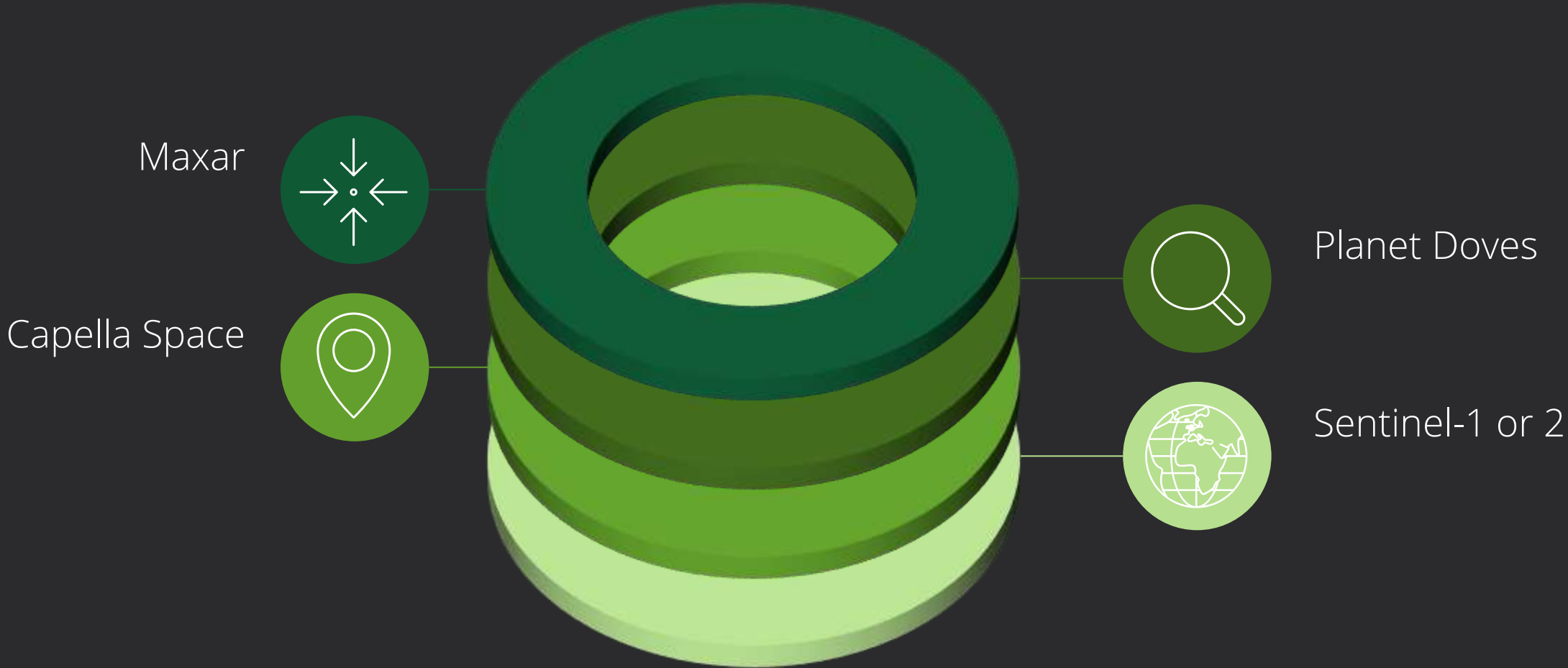
02 MEASURE

03 VERIFY

04 REPORT

Lessons learnt along the way

01 DATA



Solutions are based on using a multi-sensor approach, cloud computing and secure online delivery

01 DATA

The background of the slide is a composite of four different satellite images of the same geographic area, arranged in a 2x2 grid. The top-left image shows a lush green forest. The top-right image shows a mix of green and brown, possibly a different season or a different sensor. The bottom-left image shows a dark, dense forest. The bottom-right image shows a landscape with various shades of green and brown, with some structures visible. A semi-transparent teal rounded rectangle is centered over the images, containing white text. On the left side, there are two teal rounded rectangles, one containing the letter 'S' and the other containing a white horizontal line. On the right side, there are two teal rounded rectangles, one containing a white arrow pointing to the right.

Try find the best satellite imagery fit for the project, rather than trying to make the satellite imagery fit into the project

S



02 MEASURE



```
# monitor field usage SECTION 2: Processing each day of the month updating the collected field, stop when all collected
logging.info('SECTION 2: Processing each day of the month updating the collected field, stop when all collected or "
" all data processed')

iteration = 1
iter_str = str(iteration)
all_comps_open = True
while all_comps_open:
    open_comps = True

    logging.info('This is iteration %d', format(iter_str))

# monitor field usage SECTION 2: Get all the data to be given month
logging.info('SECTION 2: Getting all the data to be given month')

# get all the data to the given month
processing_dates = sort_dates_of_month(month, year)

if today_data in processing_dates:
    logging.info('You are currently in the given month, deleting today's data and all following dates from the "
" processing_dates list for month %d', format(month))
    target_index = processing_dates.index(today_data)
    to_remove = processing_dates[target_index + 1]
    del to_remove
    processing_dates.remove(to_remove)

else:
    logging.info('Processing month in last month or year, processing all dates for month %d', format(month))
# monitor field usage SECTION 2: Get through each date of the month and get data from comps
logging.info('SECTION 2: Run through each date of the month and get data from comps')

for processing_date in processing_dates:
    if not open_comps:
        break

    logging.info('Working on %d', format(processing_date))
```

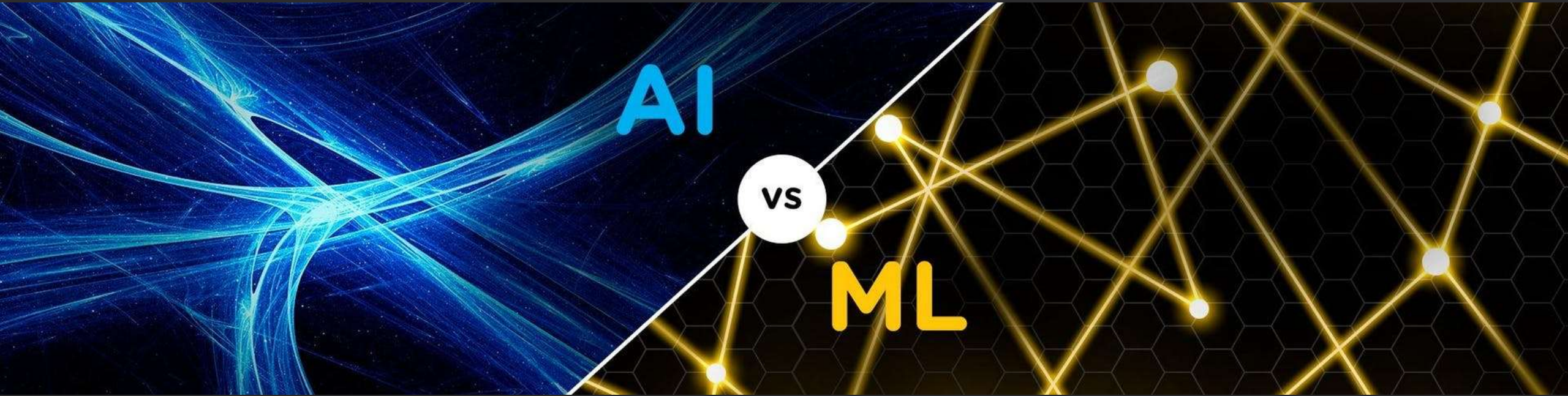


Desktop

Cloud

- ESRI ArcPRO to ESRI Enterprise
- Manual processing to Python Scripting
- No need to reinvent the wheel (NDVI was first used in 1973...50yrs old and still going strong)
 - Focus is now on type/number of sensors, speed of processing and delivery of results

03 VERIFY



AI is best for completing a complex human task with efficiency

ML is best for identifying patterns in large sets of data to solve specific problems

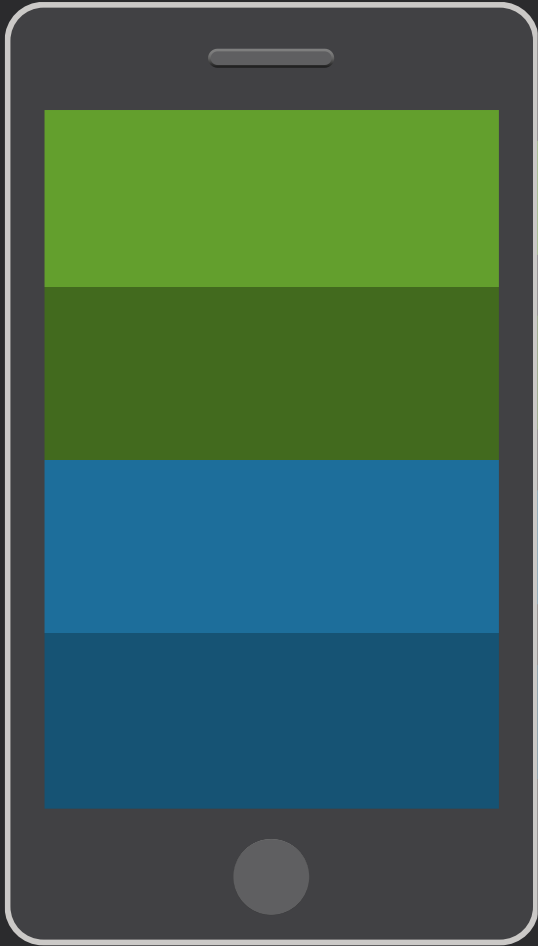
03 VERIFY



A human eye can often be the difference between failure and success within a project.

Cloud Mask - Example

04 REPORT



User Friendly



Do not need to be a specialist

Responsive



Time it takes to generate the answers

Provide Decision Support



Transparency and validation

Customisable



Creating a partnership

Case study related to forestry & protected area monitoring



Swift Geospatial can provide deforestation and protected area monitoring. We utilize third-party GLAD and RADD alerts to offer deforestation alerts and hotspot analysis, which better highlight key areas for further investigation either through high-resolution satellite imagery collection or in-field ground teams. We have successfully implemented a Deforestation Alert System for Barry Callebaut, covering cocoa plantations in eight countries, across the globe.

Case study related to forestry & protected area monitoring



Q New ▾ 🔔 Portal ▾

BARRY CALLEBAUT Barry-Callebaut Global Deforestation Monitoring



[Home Page](#) [Cocoa Projects](#) [Vanilla Projects](#)




Barry-Callebaut Global Deforestation Monitoring Site

Case study related to forestry & protected area monitoring

Explore Cocoa Project Dashboards

BARRY CALLEBAUT

Brazil
Deforestation Alert Dashboard



SWIFTGEOSPATIAL

BC Brazil Alerts

BC Brazil disturbance alerts dashboard.

Explore

BARRY CALLEBAUT

Cameroon
Deforestation Alert Dashboard



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BC Cameroon Alerts

BC Cameroon disturbance alerts dashboard.

Explore

BARRY CALLEBAUT

Ghana
Deforestation Alert Dashboard



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BC Ghana Alerts

BC Ghana disturbance alerts dashboard.

Explore

BARRY CALLEBAUT

Indonesia
Deforestation Alert Dashboard




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BC Indonesia Alerts

BC Indonesia disturbance alerts dashboard.

Explore

Ivory Coast
Deforestation Alert Dashboard




BC Ivory Coast Alerts

BC Ivory Coast disturbance alerts dashboard.

Explore

Nigeria
Deforestation Alert Dashboard



BC Nigeria Alerts

BC Nigeria disturbance alerts dashboard.

Explore

Case study related to forestry & protected area monitoring

BC Ivory Coast Alerts

Select a date range
None

Warehouse Selector
No Warehouse Selected

Farm Information

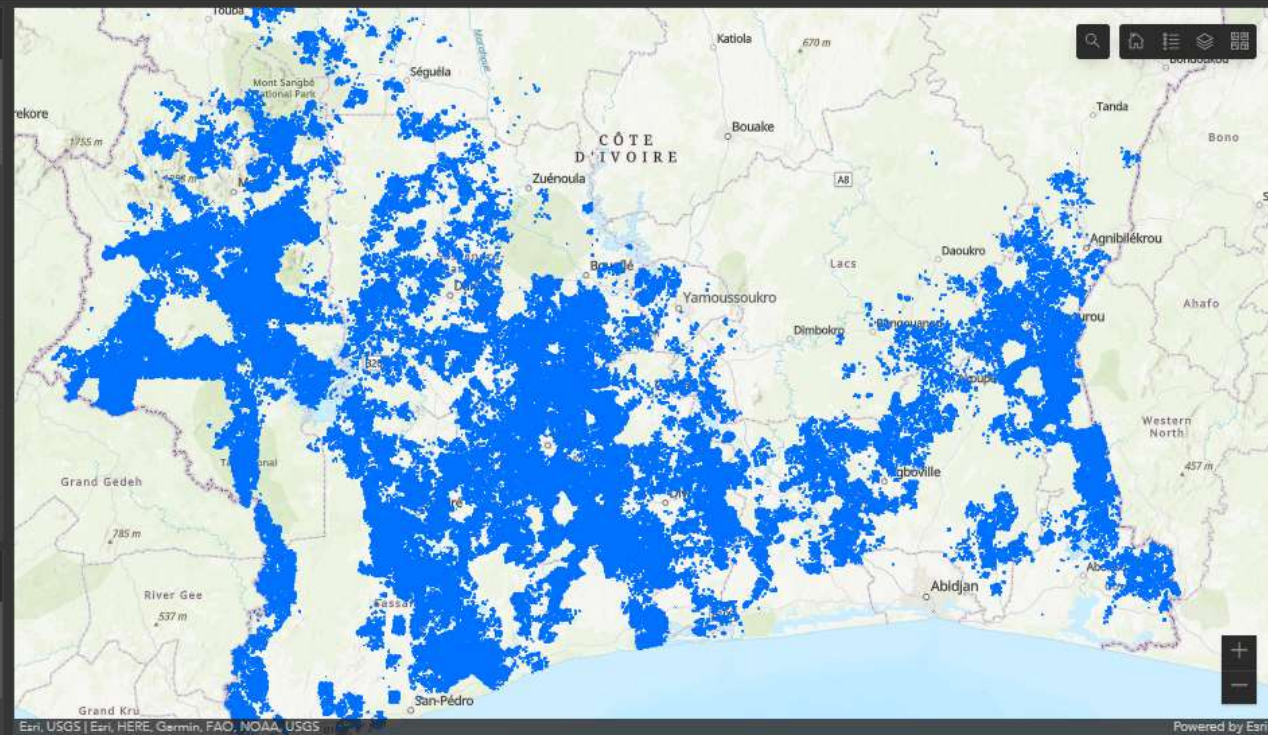
- Plantation : 0-26629790-1
Warehouse : COASI WAREHOUSE
Farm Id : 1
Ingredient : Cocoa
- Plantation : 0-14815227-1
Warehouse : LAFILA BOUMBOU WAREHOUSE
Farm Id : 2
Ingredient : Cocoa
- Plantation : 0-27813128-1
Warehouse : SCABK WAREHOUSE
Farm Id : 3
Ingredient : Cocoa
- Plantation : 0-24386167-1
Warehouse : AZIEL SCOOPS WAREHOUSE
Farm Id : 4
Ingredient : Cocoa
- Plantation : 0-27864834-1
Warehouse : CANS WAREHOUSE
Farm Id : 5
Ingredient : Cocoa
- Plantation : 0-28139729-1
Warehouse : SCAW COOP-CA WAREHOUSE

Farm Alert Information

- Date : 25/12/2021, 02:00
Zone : 0 km
Alert Source : GLAD-L
- Date : 03/08/2021, 02:00
Zone : 0 km
Alert Source : GLAD-L
- Date : 17/12/2021, 02:00
Zone : 0 km
Alert Source : GLAD-L
- Date : 03/08/2021, 02:00
Zone : 0 km
Alert Source : GLAD-L
- Date : 13/04/2021, 02:00
Zone : 0 km
Alert Source : GLAD-L

Disturbance Alerts

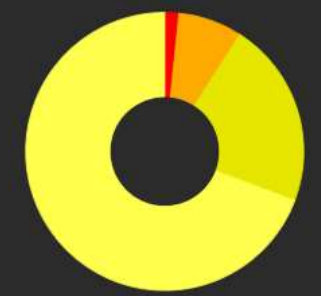
- Date: 01/08/2023
Area: 0.152285 ha
Source: GLAD-L
Farm:
Forest Type:
- Date: 01/08/2023
Area: 0.076144 ha
Source: GLAD-L
Farm:
Forest Type:
- Date: 01/08/2023
Area: 0.076147 ha
Source: GLAD-L
Farm:
Forest Type:
- Date: 01/08/2023
Area: 0.076147 ha
Source: GLAD-L
Farm:
Forest Type:
- Date: 01/08/2023
Area: 0.837615 ha
Source: GLAD-L
Farm:



Alerts within Plots

3294
246.5 Ha

Alert Regions



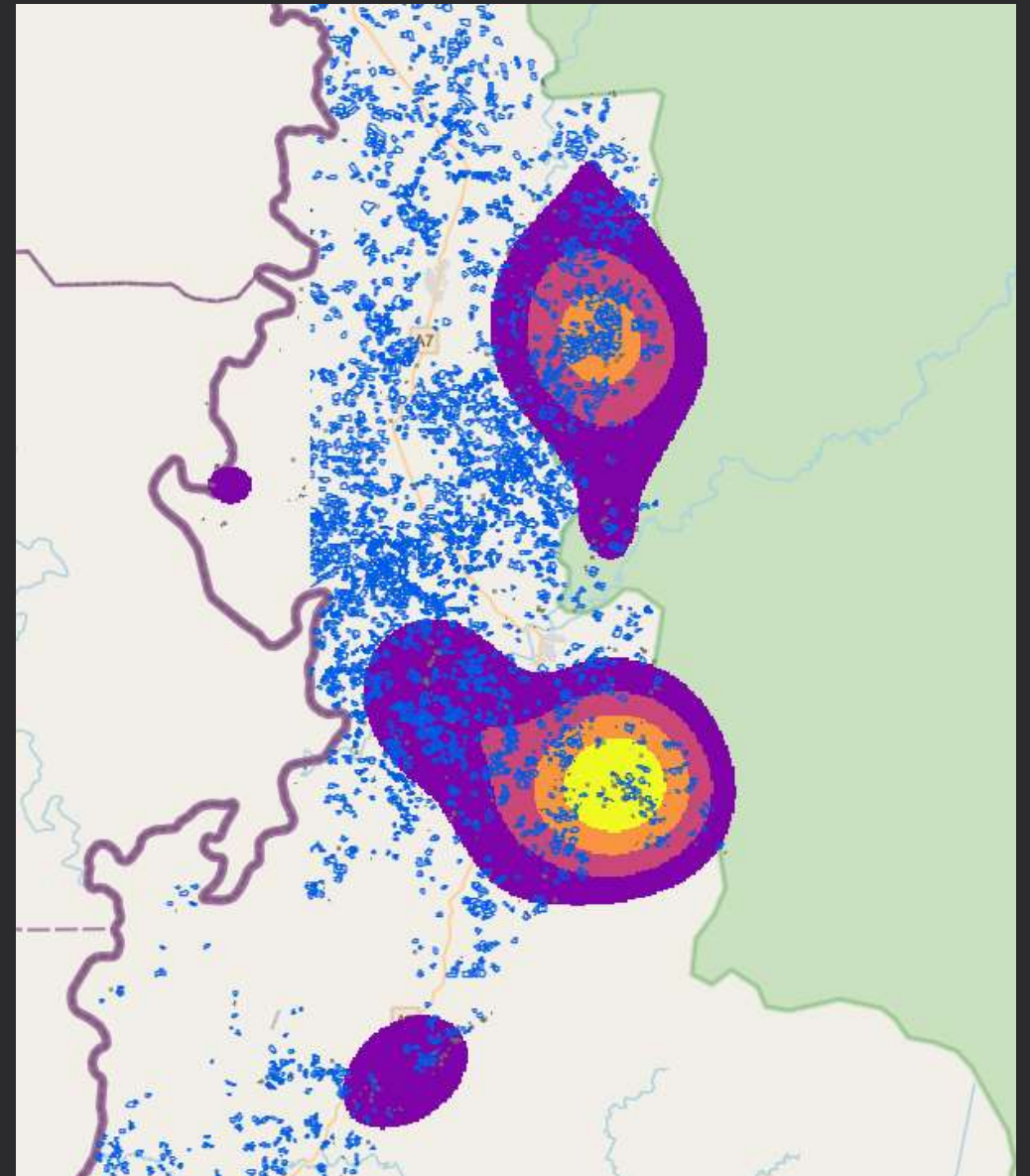
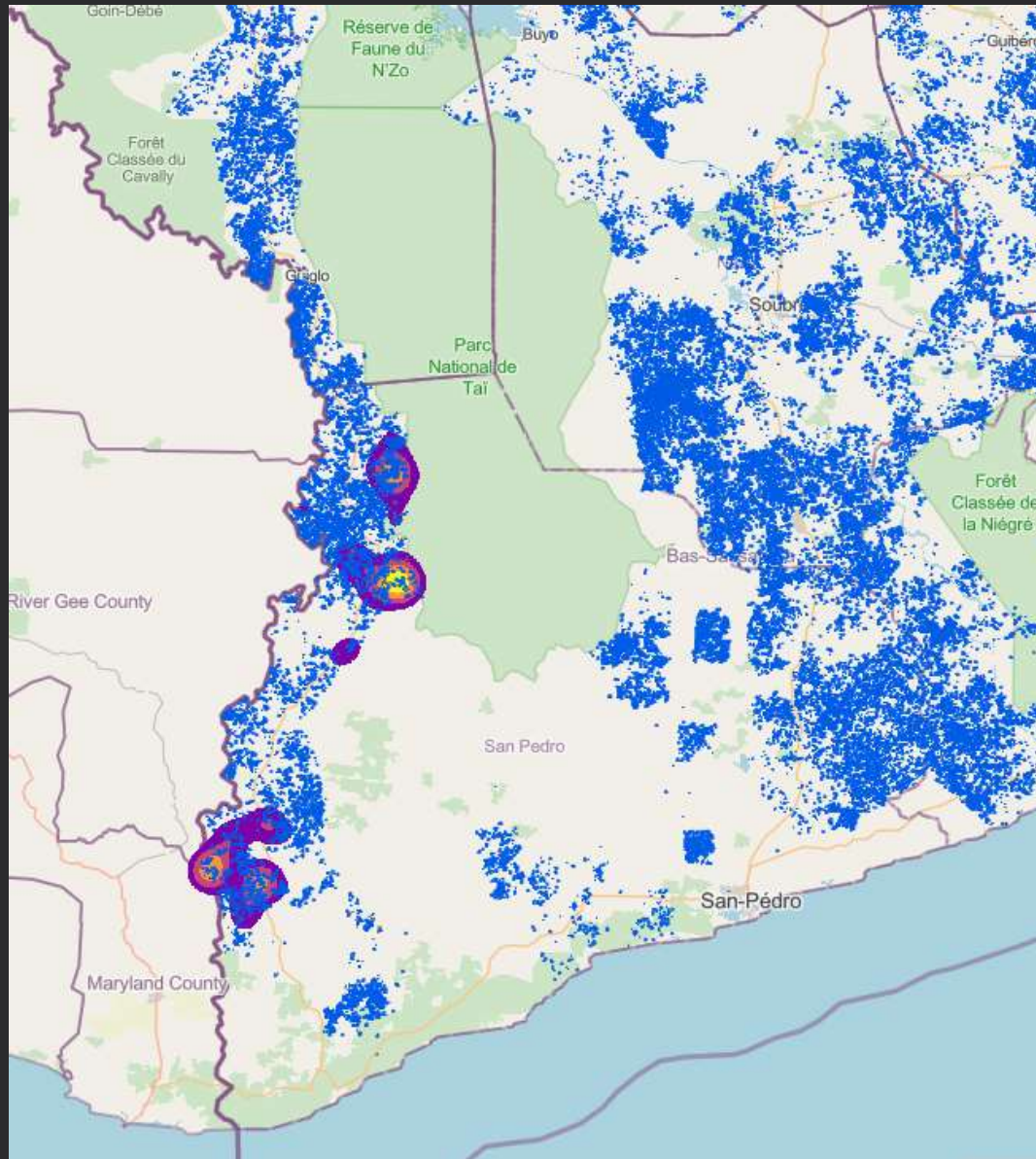
Within Plots 3306 Alerts
100 km 14965 Alerts
250 km 45433 Alerts
500 km 139079 Alerts

Yearly Forest Loss

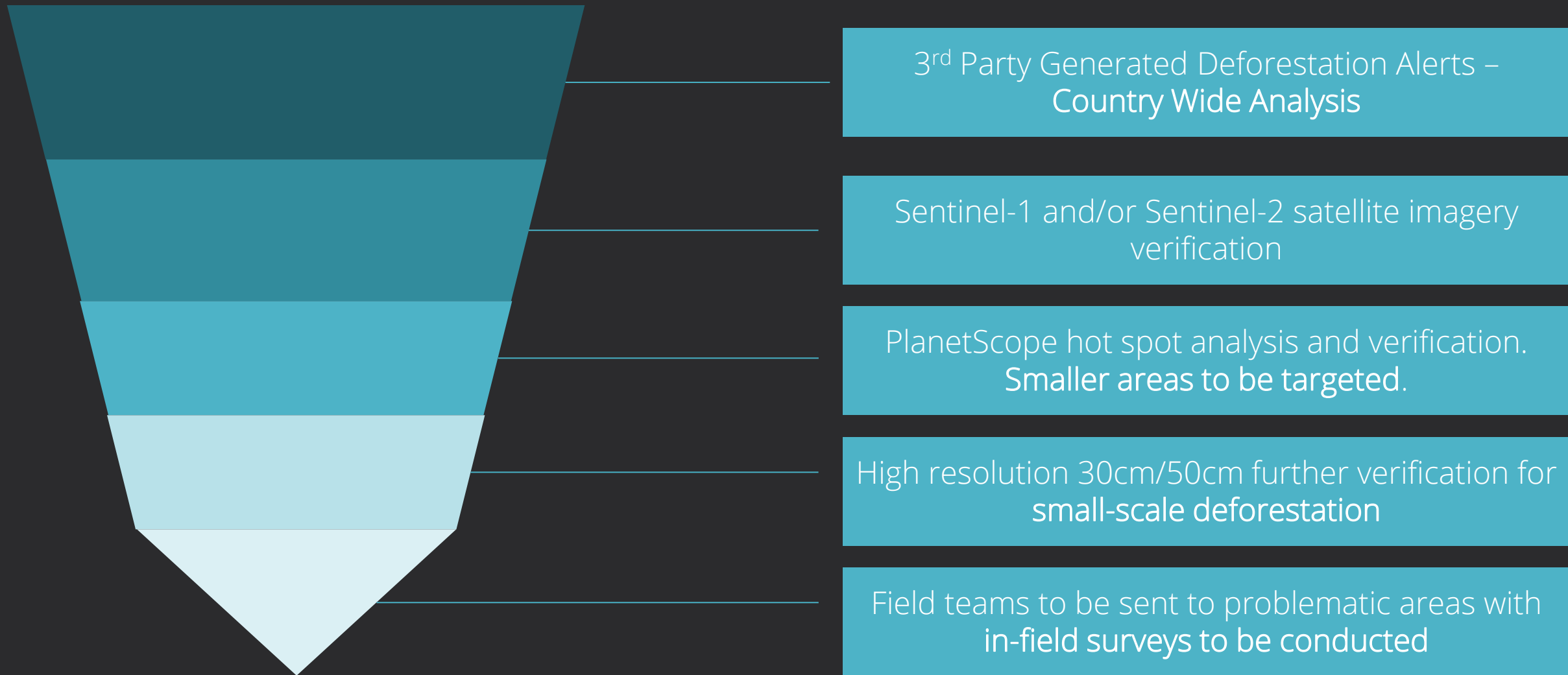


Disturbance Total Area Ha Disturbance Total Alerts **Tree Cover Loss - Area**

Case study related to forestry & protected area monitoring



Case study related to forestry & protected area monitoring





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