

SATELLITE + AI FOR EARTH OBSERVATION AGRICULTURE MONITORING

ENHANCING AGRICULTURE & FORESTRY FOR FIELD OPERATIONS USING SATELLITE X AI INTELLIGENCE

RIFFAI

BACKED BY:

Google Panasonic weathernews TIS INTEC Group NUS National University of Singapore BLOCK71 SINGAPORE SparkLabs GIST

Stanford UNIDO NEW ENERGY NEXUS Cardinal Ventures depa NIA NATIONAL INNOVATION AGENCY Panacea Stars INNOVATION FACTORY

PROBLEM

Agricultural decisions still depend heavily on fragmented information, periodic field visits, manual scouting, and data that arrives too late.



WHERE IS THE CROP UNDER STRESS?

WHAT IS CHANGING?

WHICH AREA NEEDS ATTENTION FIRST?

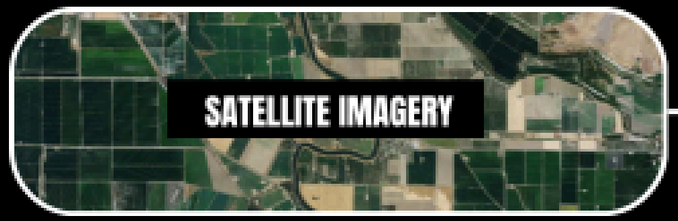
WHEN SHOULD THE FIELD BE INSPECTED?

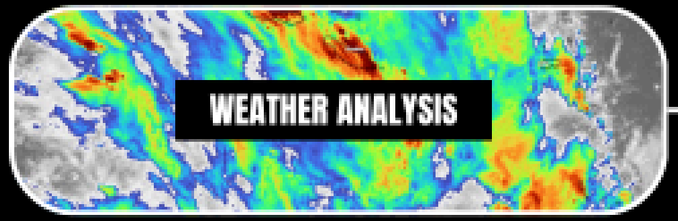
WHERE SHOULD RESOURCES BE DEPLOYED?

RIFFAI IS AN AI-POWERED EARTH OBSERVATION COMPANY

RIFFAI

Input









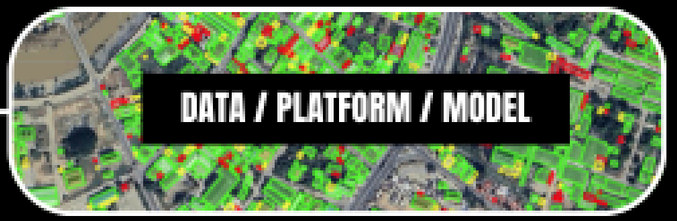
RIFFAI: Revolutionize AI in Earth Observation

Multi-Source Intelligence



RIFFAI specialised in rapid analysing and processing massive satellite data records

Deployment









PRODUCT OVERVIEW

RIFFAI Agriculture is an AI-powered satellite intelligence platform that transforms Earth observation into field-level agricultural insight. It continuously monitors crop health, water, growth, environmental conditions and stress—helping farmers identify changes, prioritize areas for attention, and connect satellite intelligence with drone and IoT data for faster, smarter action.

MAKE EVERY FIELD VISIBLE

TRANSFORM COMPLEX CONDITIONS INTO A CLEAR, FIELD-LEVEL PICTURE.

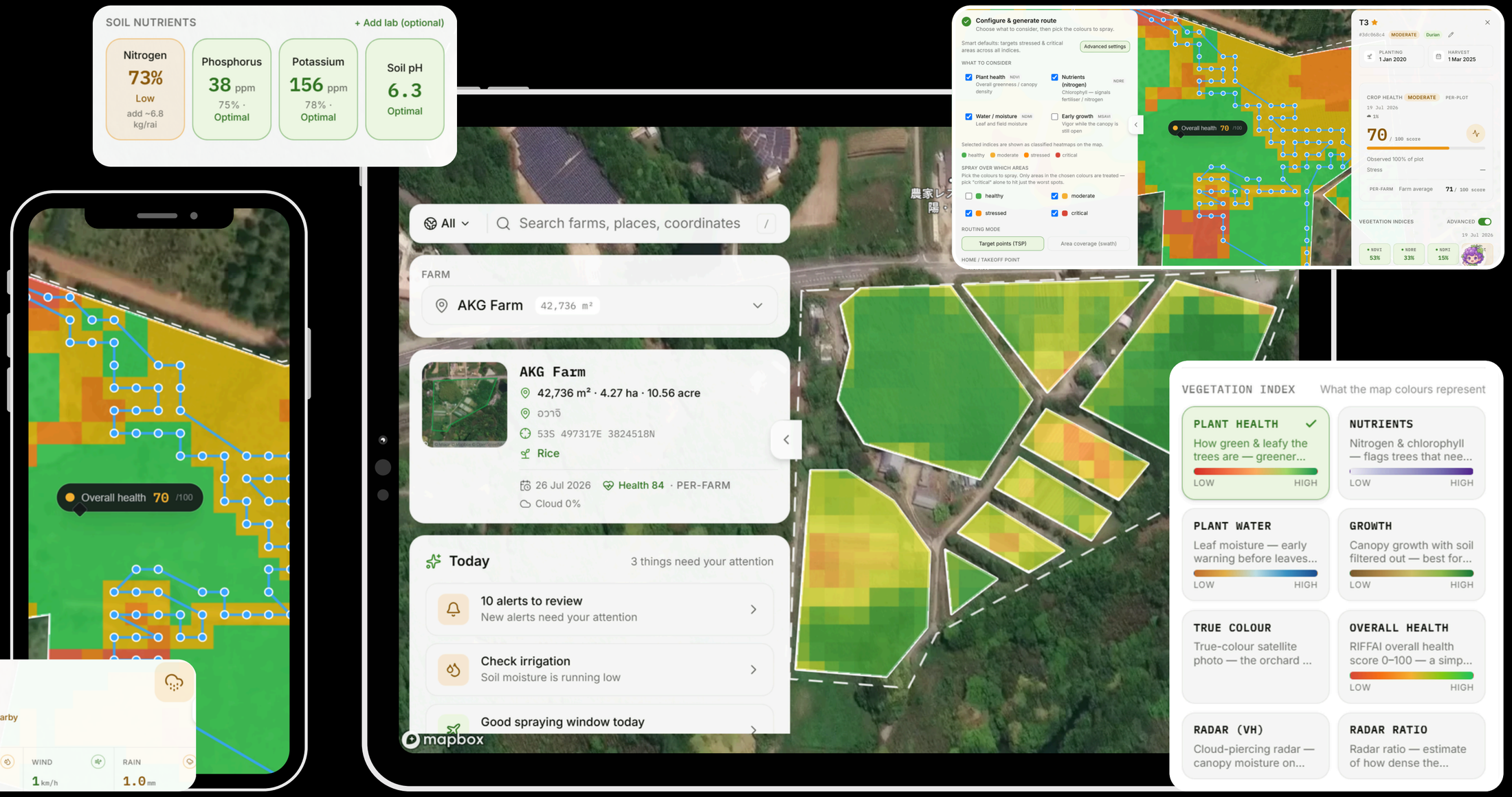
TURN OBSERVATION INTO DATA

DETECT CHANGES —WITHOUT RELYING SOLELY ON MANUAL FIELD INSPECTION.

TURN DATA INTO ACTION

HELP FARMERS KNOW WHERE, WHEN AND WHAT TO INSPECT OR RESPOND TO.

PRODUCT


SOIL NUTRIENTS
+ Add lab (optional)
Nitrogen
73%
Low
add ~6.8 kg/rai
Phosphorus
38 ppm
75% · Optimal
Potassium
156 ppm
78% · Optimal
Soil pH
6.3
Optimal
Overall health 70 /100
RIGHT NOW
26 °C
Showers nearby
Feels like 26°C
HUMIDITY
93%
WIND
1 km/h
RAIN
1.0 mm
All
Search farms, places, coordinates
FARM
AKG Farm
42,736 m²
AKG Farm
42,736 m² · 4.27 ha · 10.56 acre
อวาจิ
53S 497317E 3824518N
Rice
26 Jul 2026
Health 84 · PER-FARM
Cloud 0%
Today
3 things need your attention
10 alerts to review
New alerts need your attention
Check irrigation
Soil moisture is running low
Good spraying window today
mapbox
Configure & generate route
Choose what to consider, then pick the colours to spray.
Smart defaults: targets stressed & critical areas across all indices.
Advanced settings
WHAT TO CONSIDER
Plant health NDVI
Overall greenness / canopy density
Nutrients (nitrogen) NDRE
Chlorophyll — signals fertiliser / nitrogen
Water / moisture NDMI
Leaf and field moisture
Early growth MSAVI
Vigor while the canopy is still open
Selected indices are shown as classified heatmaps on the map.
healthy moderate stressed critical
SPRAY OVER WHICH AREAS
Pick the colours to spray. Only areas in the chosen colours are treated — pick "critical" alone to hit just the worst spots.
healthy
moderate
stressed
critical
ROUTING MODE
Target points (TSP)
Area coverage (swath)
HOME / TAKEOFF POINT
Overall health 70 /100
T3
#3dc0b8c4
MODERATE
Durian
PLANTING
1 Jan 2020
HARVEST
1 Mar 2025
CROP HEALTH
MODERATE
PER-PLOT
19 Jul 2026
1%
70 / 100 score
Observed 100% of plot
Stress
PER-FARM
Farm average
71 / 100 score
VEGETATION INDICES
ADVANCED
19 Jul 2026
NDVI 53%
NDRE 33%
NDMI 15%
VEGETATION INDEX
What the map colours represent
PLANT HEALTH
How green & leafy the trees are — greener...
LOW HIGH
NUTRIENTS
Nitrogen & chlorophyll — flags trees that nee...
LOW HIGH
PLANT WATER
Leaf moisture — early warning before leaves...
LOW HIGH
GROWTH
Canopy growth with soil filtered out — best for...
LOW HIGH
TRUE COLOUR
True-colour satellite photo — the orchard ...
OVERALL HEALTH
RIFFAI overall health score 0–100 — a simp...
LOW HIGH
RADAR (VH)
Cloud-piercing radar — canopy moisture on...
RADAR RATIO
Radar ratio — estimate of how dense the...
LOW HIGH

PRODUCT



OVERALL HEALTH

Satellite Parameters: Overall vegetation condition, canopy density, and plant.



WATER

Satellite Parameters: Field and canopy moisture conditions + potential water deficit



GROWTH

Satellite Parameters: Crop coverage, canopy development, and changes.



NUTRIENT

Satellite Parameters: Indicators associated with plant nutrition and chlorophyll.

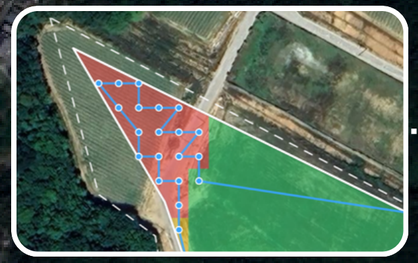


STRESS

Satellite Parameters: Signals associated with leaf condition and physio-performance

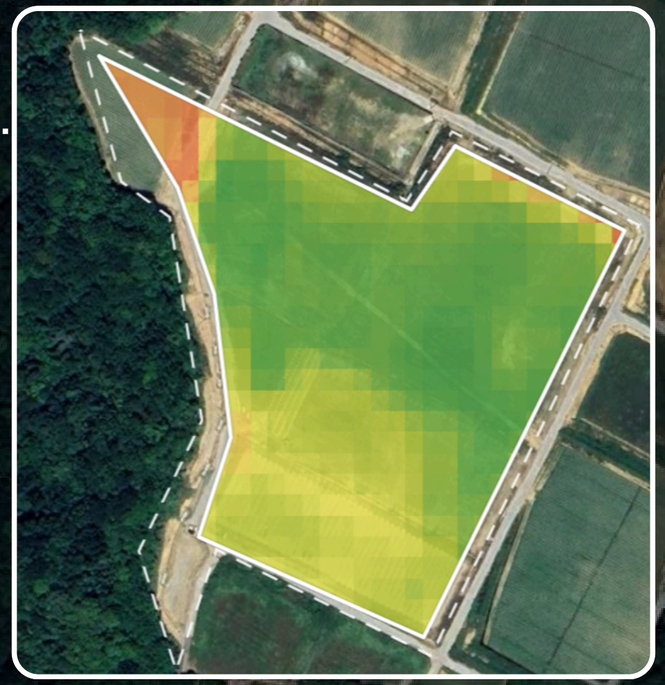
MARKET ADVANTAGES

We has developed 3 enabling technologies to help commercialized our technology in today market.



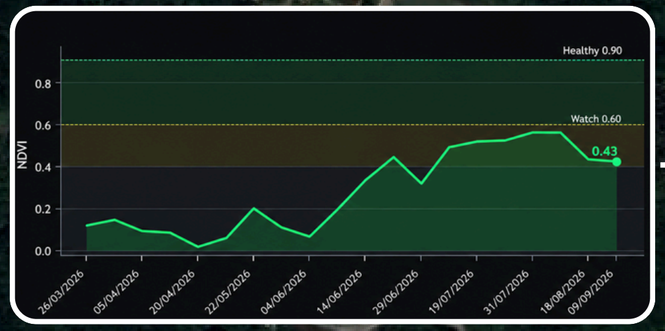
MULTI-SOURCE INTELLIGENCE

CONNECT BEYOND SATELLITE DATA TO DRONE, TRACTOR, & IOTS.



INTELLEGENCE & REPORTING

ONE-CLICK AWAY FROM PROCESSED DATA ON FARM SITUATION.



IMMEDIATE PROCESSING METADATA

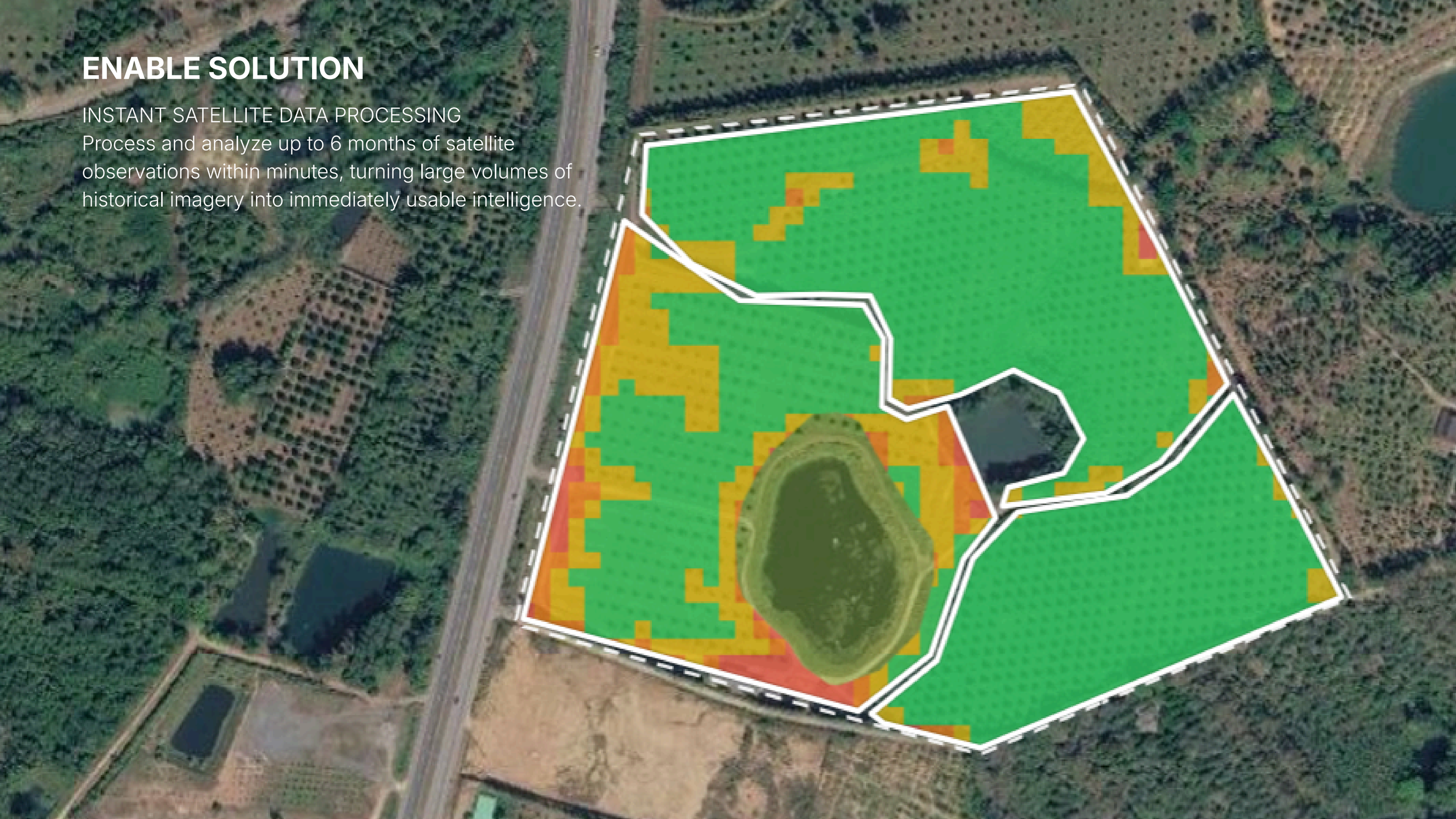
UNLOCK HISTORY OF LAND THROUGH INFORMATION OF SATELLITES AND KEEP RECORD.



ENABLE SOLUTION

INSTANT SATELLITE DATA PROCESSING

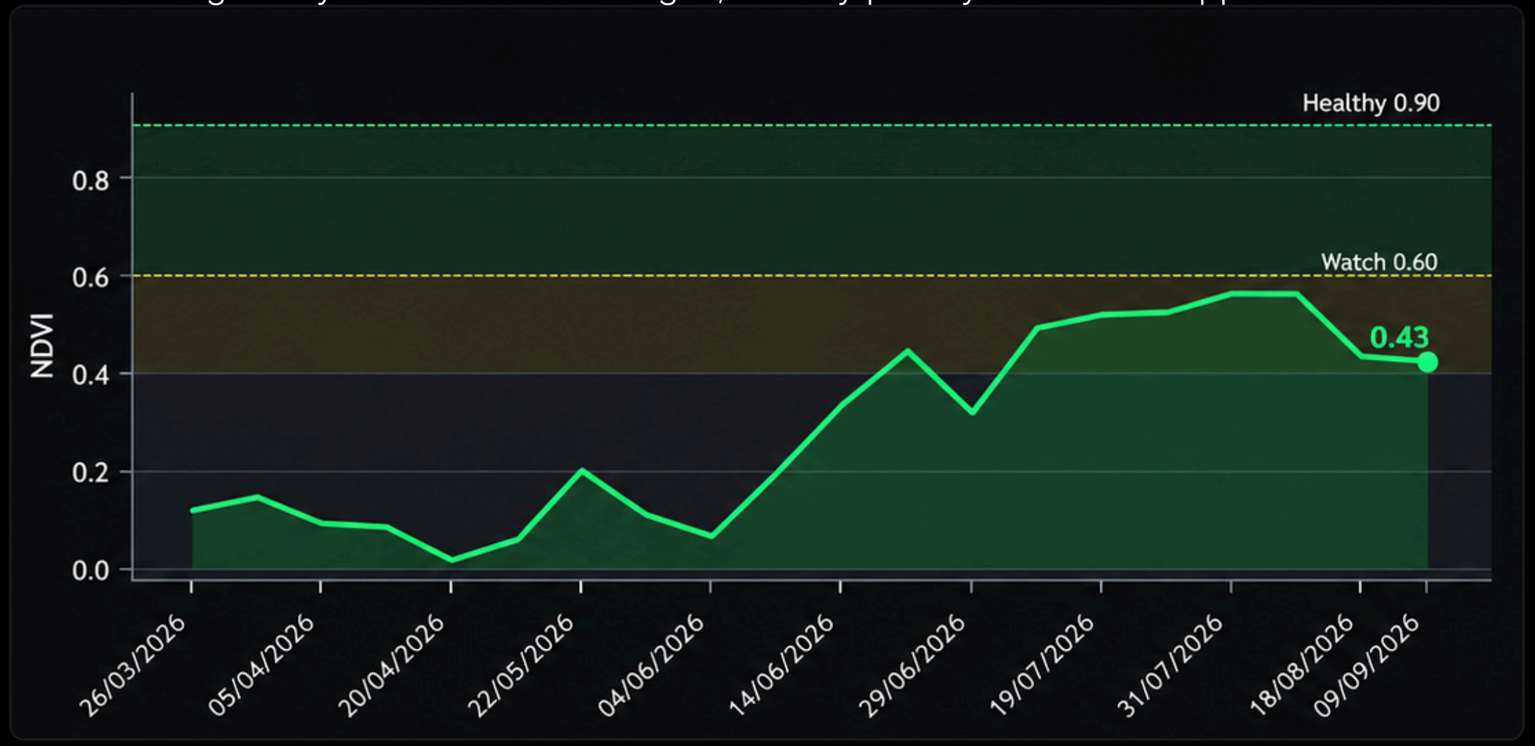
Process and analyze up to 6 months of satellite observations within minutes, turning large volumes of historical imagery into immediately usable intelligence.

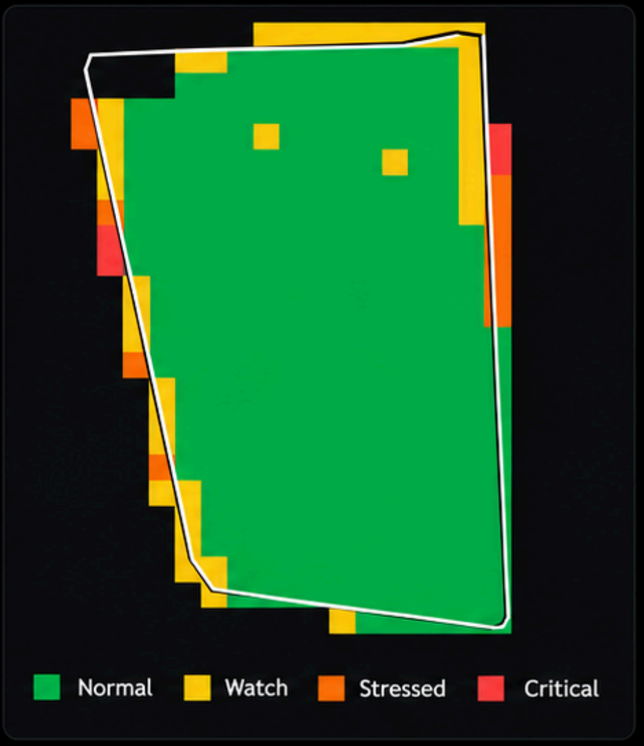


ENABLE SOLUTION

FIELD INTELLIGENCE & REPORTING

Connect historical, current and new observations to build an evolving understanding of each field—allowing the system to detect changes, identify priority areas and support field action.









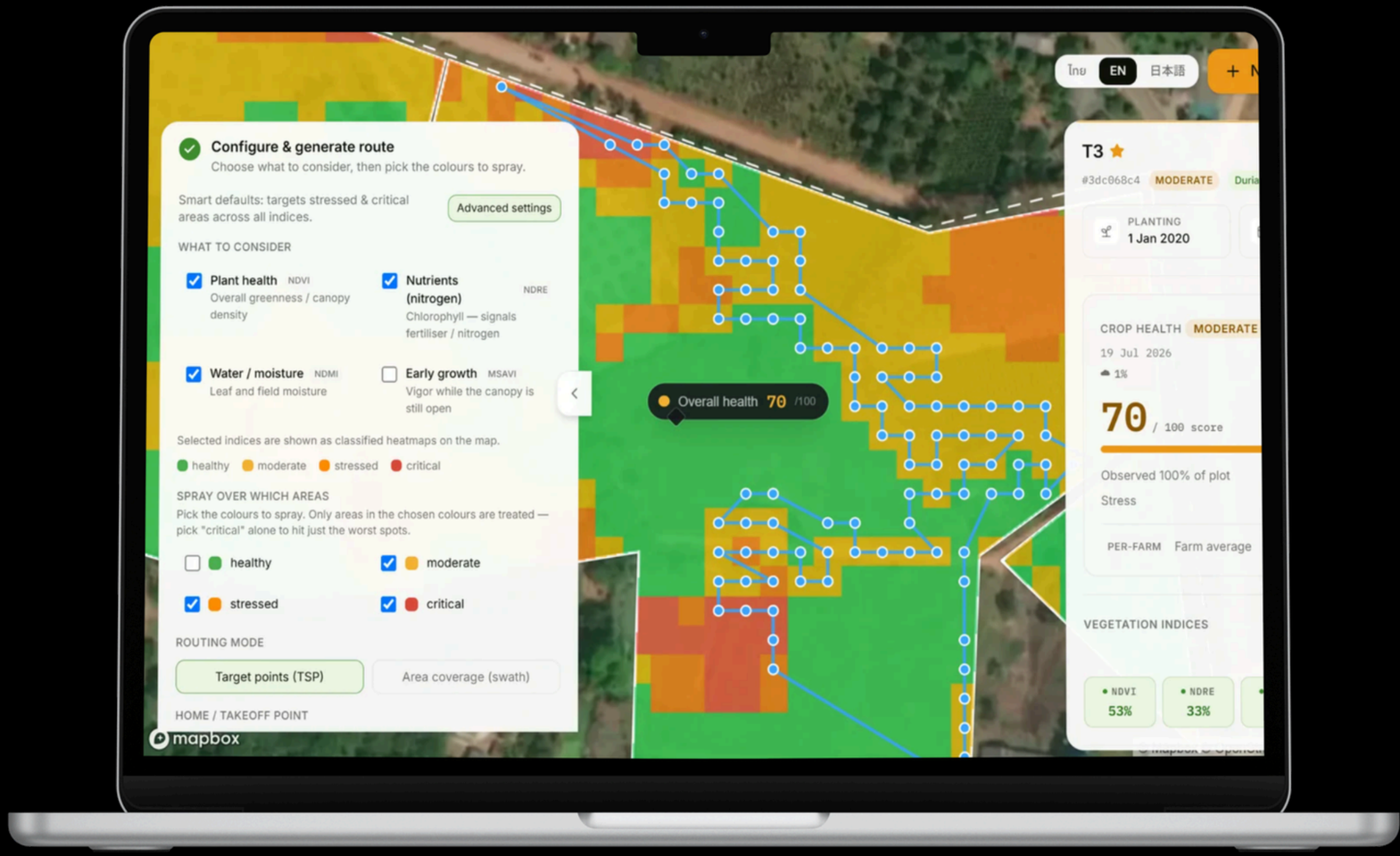


ENABLE SOLUTION

MULTI-SOURCE INTELLIGENCE FUSION

Combine satellite + drone + IoT + environmental data within one intelligence layer, connecting observations from space, air and ground.





WHY US?

A Team of 20 Engineers From Satellite, AI, GIS, and Earth Observation.

Board of Advisor from

Stanford University · Massachusetts Institute of Technology · NTT · Microsoft · NCS

KOLATAT KATOUSANO
Founder & Chief Executive Officer at RIFFAI

Google for Startups · Global Green Growth Institute · Schneider Electric · The Crown Estate

PUTHIPHAT JIRAWATANAPHALIN
Chief Representative at RIFFAI

KMUTT King Mongkut's University of Technology Thonburi · East-West Center · GPSC



TINTHAI BOOTSEETA
Chief Technology Officer at RIFFAI

KMUTT King Mongkut's University of Technology Thonburi · GISTDA

KONGPHAT PHAIBOONNUKULKIJ
Chief Breakthrough Officer at RIFFAI

Edge (Excellence In Design For Greater Efficiencies) · IFC



DRONE PROJECT

ONE FLIGHT PATH. A SECOND TO CHANGE EVERYTHING.

Upload the AI-generated flight path to an SD card. The moment the drone takes off, RIFFAI turns satellite intelligence into targeted aerial inspection. In our Chanthaburi pilot, RIFFAI identifies priority abnormalities from satellite imagery, generates the corresponding flight path, and transfers it to the drone via SD card. Once airborne, the drone follows the designated route to capture high-resolution imagery of the areas that matter most—creating a rapid link between space-based detection and ground-level verification.

IMPACT












5+
COUNTRIES



1000+
FARMS



160M
HECTARES






AGRICULTURE AT SCALE

ONE INTELLIGENCE PLATFORM. THOUSANDS OF FARMS. MILLIONS OF HECTARES.

RIFFAI creates a scalable way to observe agricultural conditions—from individual fields to large agricultural regions—and turn complex Earth observation data into practical insights for farmers, operators, and decision-makers.




















ONE PLATFORM. EVERY CROP.

MULTI-CROP AGRICULTURAL INTELLIGENCE

Rice · Sugarcane · Cassava · Palm Oil · Garlic · Onion · Mango · Corn · Rubber · Pineapple · Soybean · Coffee · Potato · Longan · Durian · Grape · Banana · Coconut

18+

SPECIMENS
















BUSINESS MODEL

INTEGRATED RIFFAI PLATFORM INTO THEIR PRODUCT AND REACH TO MARKET

PARTNERSHIP

RIFFAI COOPERATION



AGRICULTURE



MAKE AGRICULTURE SMARTER

RIFFAI

AGRICULTURAL PLATFORM



UP TO 90% ACCURACY IN DATA FROM SATELLITE IMAGERY PROCESSING AND META DATA MANAGEMENT

GET RIFFAI PRODUCT AT WHOLESALE PRICE TO RESALE VALUE

INDEPENDENTLY SELL RIFFAI DIRECTLY TO DISTRIBUTION CHANNEL

DISTRIBUTION

MAJOR FARM HOLDER • AGRICULTURAL CORPORATION • AGRICULTURE PRODUCT

FASTER DECISION MAKING TIME & DOWNSTREAM INFORMATION

HIGHLY PERFORMING AGRICULTURE PRODUCT

END CLIENT

SMALL FARM HOLDER • LAND DEVELOPERS • FARM PORTFOLIO → END CLIENT

BENEFITS TO ECOSYSTEM

RIFFAI OPTIMIZED PLATFORM TO BE MORE BRING BENEFITS TO ALL STAKEHOLDER IN THE AGRICULTURE ECOSYSTEM

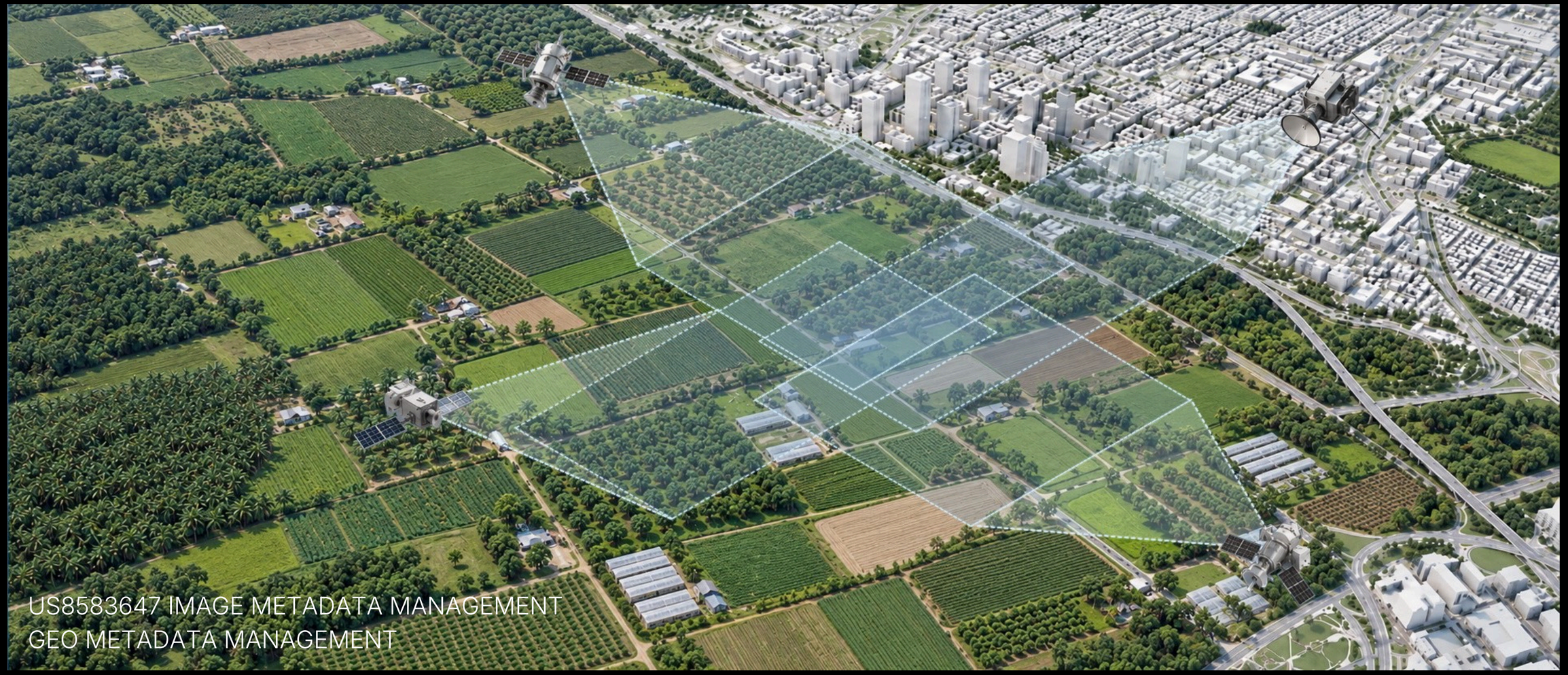
PROJECT IN LAOS



AGRICULTURAL RESEARCH CENTER OF SOUTHERN LAOS

CLIENT: NATIONAL AGRICULTURE AND FORESTRY RESEARCH INSTITUTE
LOCATION: PAKSONG KM38, LAOS
AREA: 488,464 SQM (3 FARM UNITS)

INTELLECTUAL PROPERTY



LEARN EVERY FIELD, OVER TIME

FROM SATELLITE OBSERVATIONS TO A LIVING AGRICULTURAL MODEL

RIFFAI can integrate an adaptive image-classification approach into its Agriculture platform to continuously learn the unique characteristics of each farm, crop, and growing season. Satellite and drone imagery are analyzed over time to identify recurring patterns, classify agricultural conditions, detect changes, and improve the model through field-level feedback.

RIFFAI

BRING SPACE DOWN TO EARTH

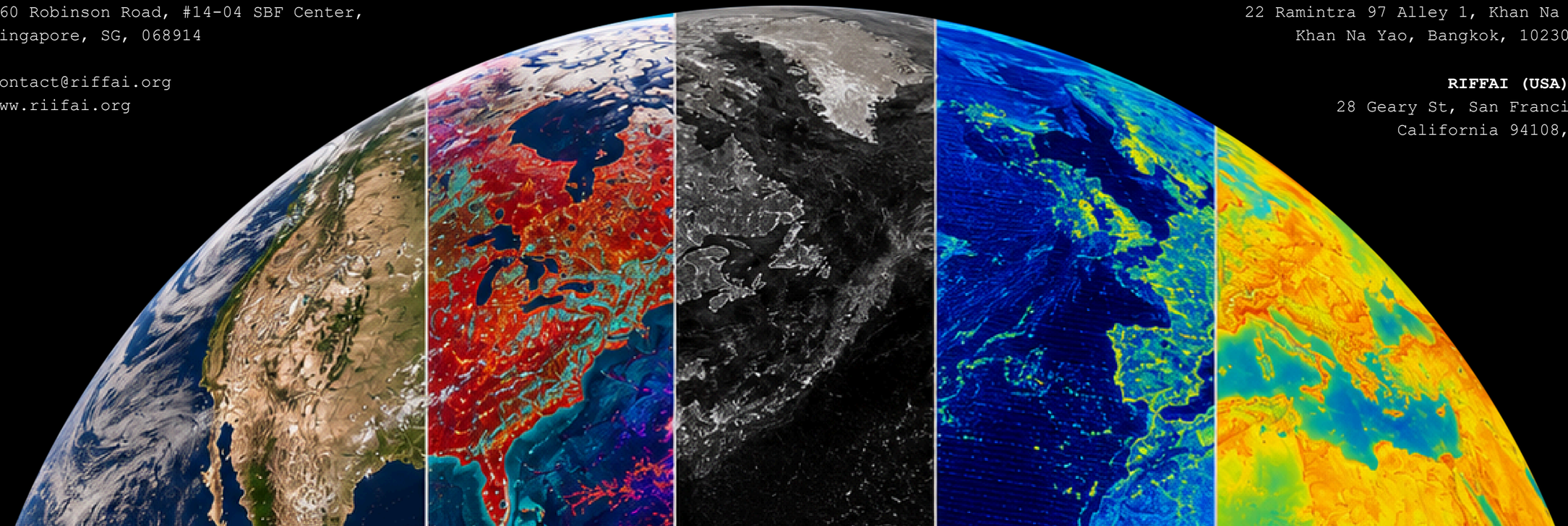
On a Mission to Bridge the Gap Between Space and Everyday Life Here on Earth on a Planetary Scale

RIFFAI (Singapore) Pte. Ltd.
160 Robinson Road, #14-04 SBF Center,
Singapore, SG, 068914

contact@riffai.org
www.riifai.org

RIFFAI (Thailand) Co., Ltd.
22 Ramintra 97 Alley 1, Khan Na Yao,
Khan Na Yao, Bangkok, 10230, TH

RIFFAI (USA) LLC
28 Geary St, San Francisco,
California 94108, USA



MINING SOLUTION

MULTI-SOURCE INTELLIGENCE

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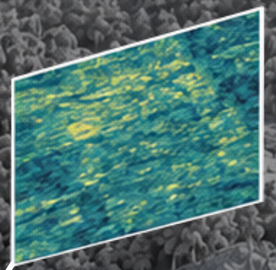

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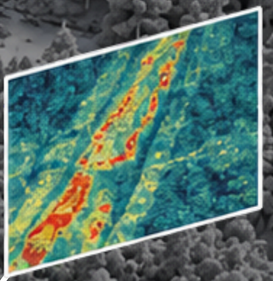

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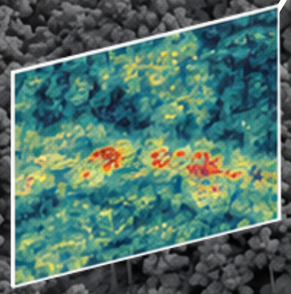

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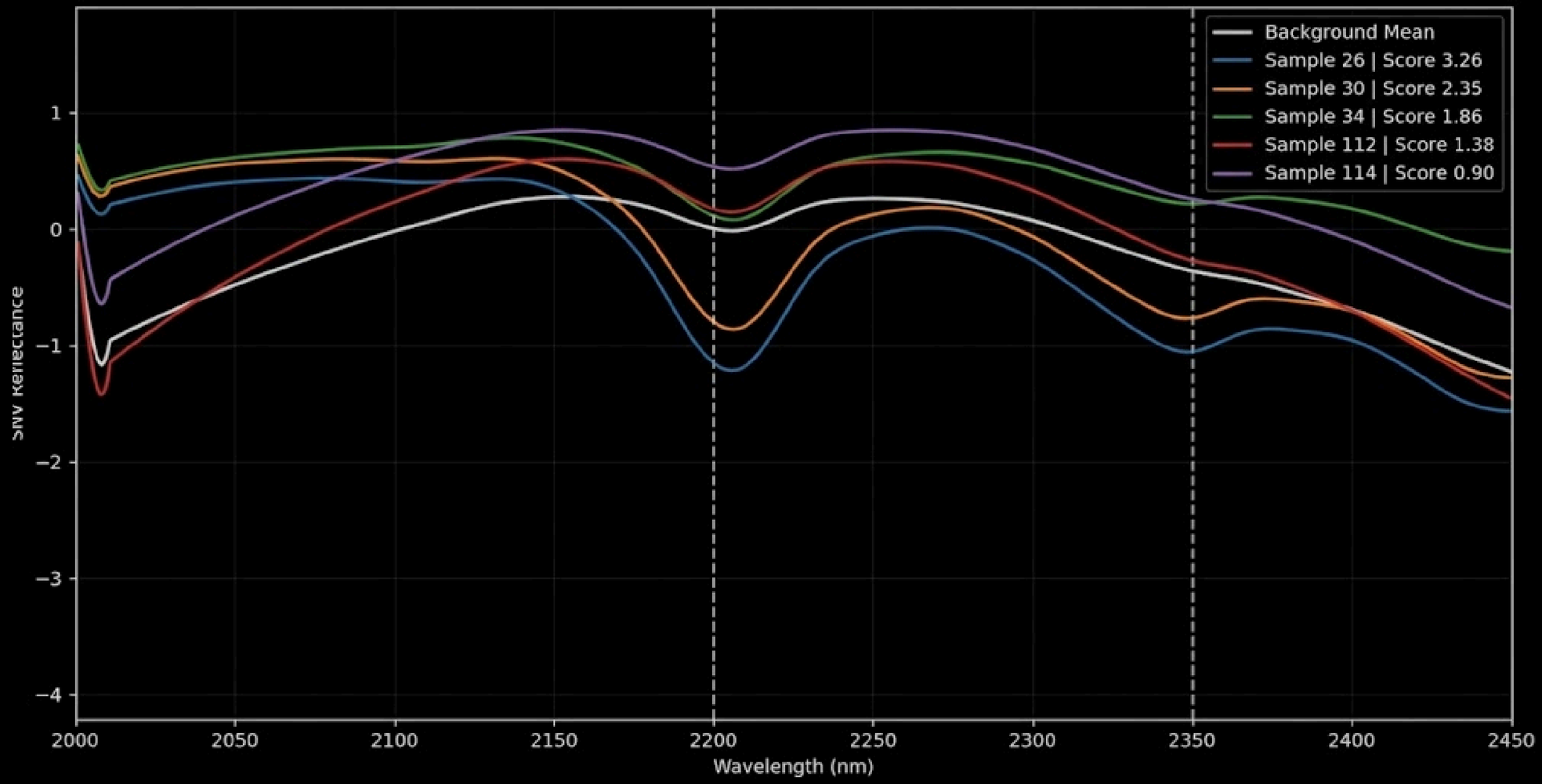
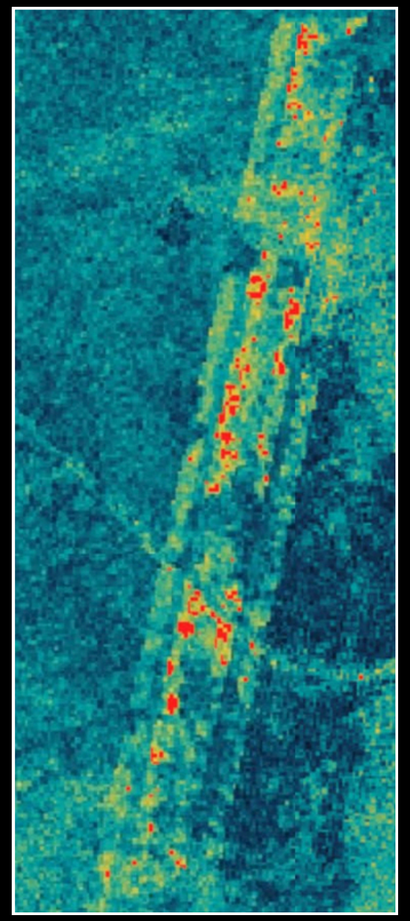
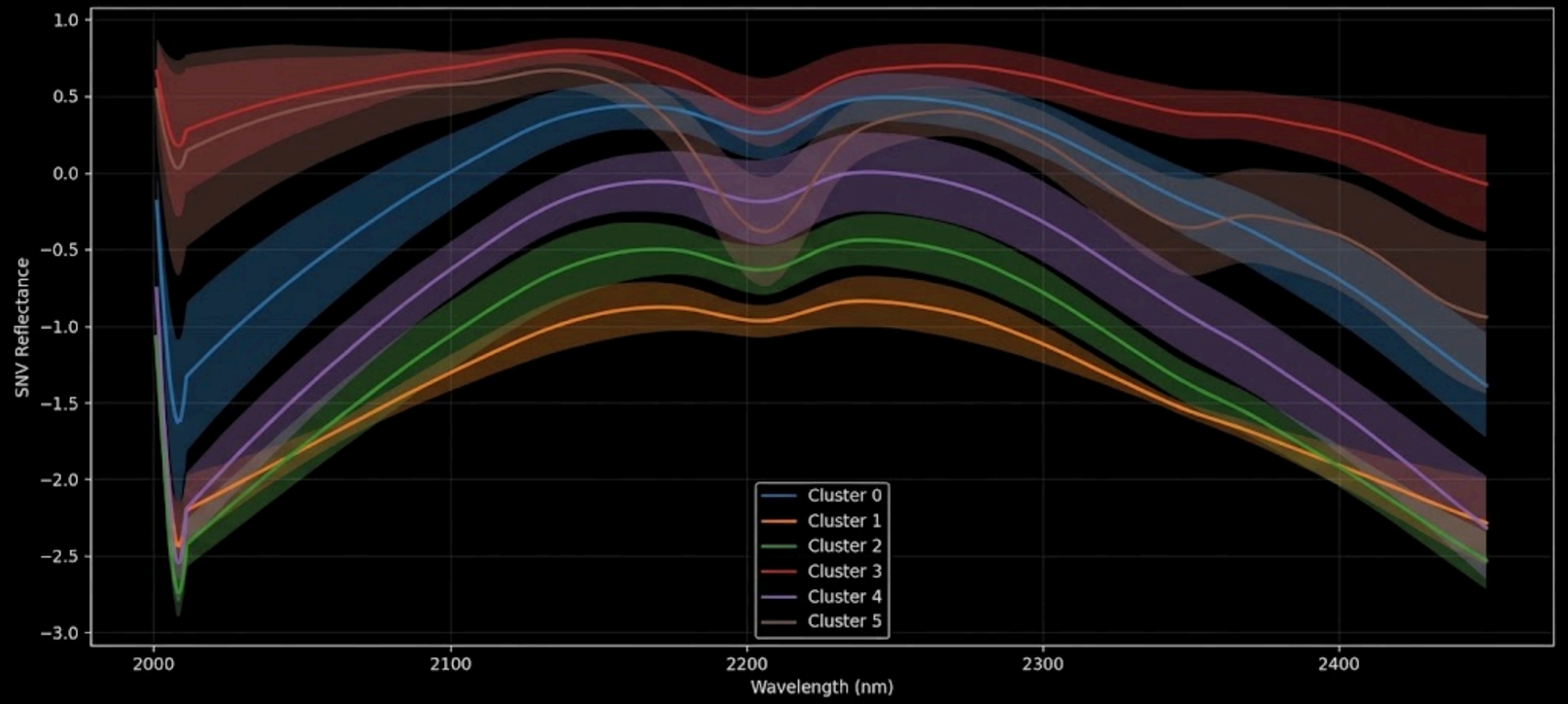




NARROW THE SPECTRAL SIGNAL

From hundreds of wavelengths to a focused set of diagnostic bands.
Screen the full hyperspectral dataset and select a small number of the most informative wavelengths or wavelength combinations for distinguishing target geological signatures from background conditions.





DETECTION CAPABILITY

44+
MINERALS

10+
INDICATORS

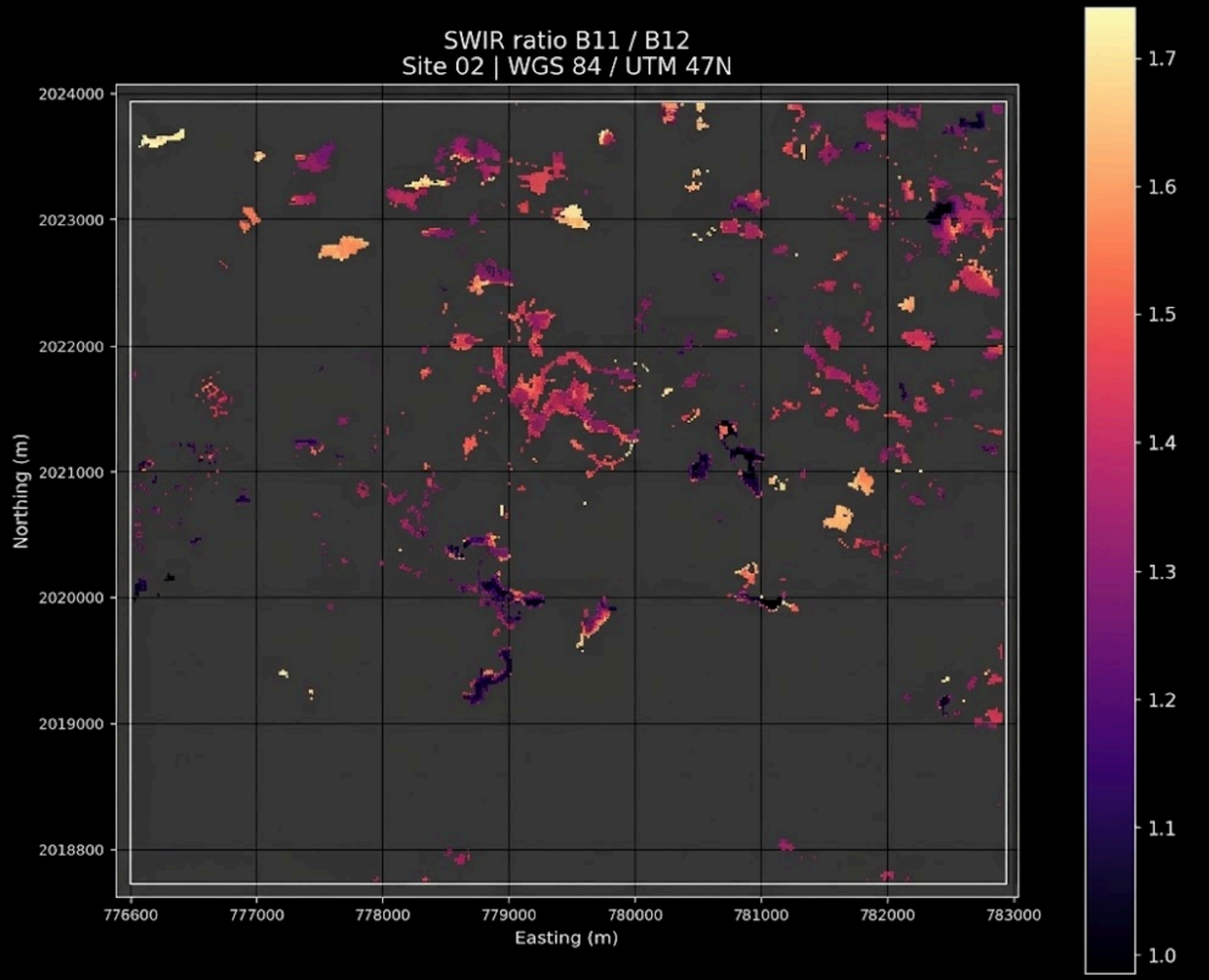
5+
MODELS

MINERAL EXPLORATION AT SCALE

Hematite · Goethite · Kaolinite · Halloysite · Muscovite · Sericite · Chlorite · Epidote · Alunite · Calcite · Dolomite · Gypsum · Serpentine · Tremolite · Actinolite · Talc · Gibbsite · Jarosite · Illite · Smectite · Montmorillonite · Pyrophyllite · Dickite · Diaspore · Siderite · Magnetite (indirect) · Quartz (limited) · Garnet (limited) · Olivine (limited) · Pyroxene (limited) · Amphibole · Biotite · Lepidolite (limited) · Spodumene (limited) · Tourmaline (limited) · Kimberlite-associated surface minerals (indirect) · Lamproite-associated surface minerals (indirect) · Jadeite (limited) · Nephrite (limited) · Serpentinized ultramafic rocks · Iron-rich laterites · Bauxite-associated minerals · Carbonate rocks · Sulfate minerals · Silicate minerals · Clay alteration minerals · Iron oxide alteration zones · Hydrothermal alteration assemblages

PROJECT





GEOLOGICAL & SATELLITE INTELLIGENCE

RIFFAI combines existing geological maps with satellite-derived mineral indicators to identify iron oxide signatures in exposed soil and assess surrounding vegetation patterns that may reflect underlying environmental or geological conditions. These layers help narrow the search area and prioritize targets for field verification.

PROJECT

UNDERGROUND EXPLORATION

Following satellite-based target screening, the RIFFAI team conducts field exploration around the R8 tunnel area, supporting investigation toward R10. Underground geophysical assessment and field observations help evaluate subsurface structures and determine whether surface anomalies correspond to deeper geological features.



Gold Mine in Xanakharm, Laos
Location: R8
Status: Confirmed

PROJECT



Gold Mine in Xanakharm, Laos
Location: R8
Status: Confirmed

R8: TARGET ASSESSMENT

RIFFAI’s analysis identified R8 as an area with one of the strongest exploration signals among the assessed targets. This result helped prioritize R8 for further investigation, with underground observations and geological evidence needed to evaluate the potential for gold mineralization.

PROJECT







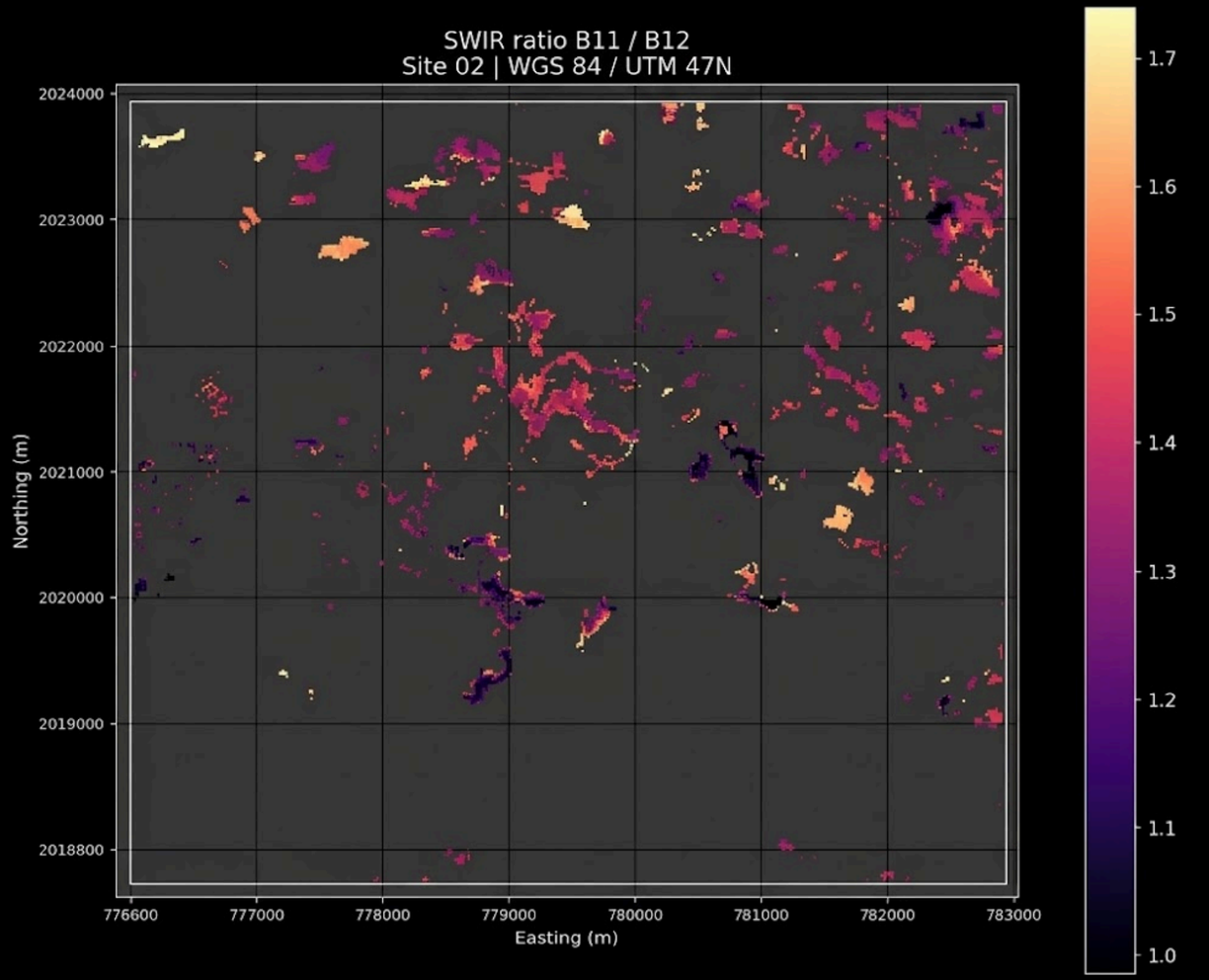
Gold Mine in Xanakharm, Laos
Location: R1
Status: Confirmed

R1: ONGOING EXPLORATION

R1 remains an active exploration site and has been identified as exhibiting the strongest gold-prospectivity signal in the assessed area. Ongoing fieldwork and subsurface investigation will help determine whether this remotely sensed signal corresponds to an economically meaningful mineralized zone.

PROJECT





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