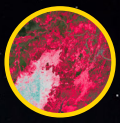
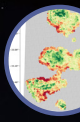
THE SPACE EDGE










SINGAPORE SPACE & TECHNOLOGY THINK TANK

Deloitte.

Foreword by Deloitte

Recent national investments and flagship space initiatives across Southeast Asia signal a decisive shift from ambition to execution, as governments lay the foundations for a more commercially vibrant space ecosystem: the establishment of the National Space Agency of Singapore, Indonesia's launch of the Nusantara Lima Satellite to expand broadband access across three countries, the inauguration of Vietnam's National Space Center. These initiatives are unleashing the commercial power of space, laying the groundwork for the private sector to unlock the US$100 billion in economic value we highlighted in our previous publication *Space to Thrive*. But what does this mean, in practice?

Building on our commitment to showcasing the value of space for non-space organisations, The Space Edge highlights how space technologies are being used by leading organisations in the region, today. By highlighting real world success stories, we hope this publication will help increase awareness of the transformational potential of these technologies and how they can be a source of unique competitive advantage — an advantage that we term 'The Space Edge'.

Deloitte Space is helping clients realise 'The Space Edge' across Southeast Asia and globally. Drawing on nearly 20 years of experience spanning more than 15 countries, Deloitte has supported organisations in translating space-enabled capabilities into tangible business value across a wide range of industries and use cases. From agriculture and natural resources to infrastructure, utilities, and the public sector, Deloitte brings both global perspective and regional relevance, helping clients unlock the full potential of the space economy.

Duleesha Kulasooriya
Managing Director
Deloitte Center for the Edge Southeast Asia

Deloitte.

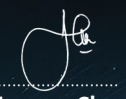
Foreword by Singapore Space & Technology Think-Tank

Space is becoming one of the quiet engines of modern economies. Its value is increasingly found not only in orbit, but in how it strengthens industries, sharpens decisions and solves problems on Earth. This publication puts that shift into focus across Southeast Asia.

Our first report, Space to Thrive: Southeast Asia Space Industry on the Rise, co-authored with Deloitte, was the first comprehensive report dedicated to the region's space ecosystem. That report marked an important shift in perspective. Space is no longer a niche domain, but an enabling layer of infrastructure that is increasingly embedded across industries as diverse as agriculture, maritime, urban planning, climate, and financial services. While the first report articulated the scale of the opportunity, this follow-up publication builds on that foundation by focusing on what matters most today — real-world adoption and the commercial value space technologies are already delivering across Southeast Asia.

Our mission at Singapore Space and Technology Think Tank is to bridge the space sector with the wider economy and make space relevant for non-space industries. We have been actively working to elevate Southeast Asia's presence on the global stage, including coordinating and launching the first ever Southeast Asia Pavilion at the 2026 edition of the Global Space Technology Convention & Exhibition. Through these efforts, we continue to drive collaboration, showcase regional capabilities, and create opportunities for cross-border partnerships.

This publication offers organisations a practical lens on how space technologies can be integrated into various companies' operations as a strategic source of growth, resilience and competitive advantage. As the region continues to evolve, the question is no longer whether space will play a role in Southeast Asia's economic future, but how quickly organisations can harness its potential.



Jeremy Chan
Chairman
Singapore Space & Technology Think Tank

The Space Edge: A new world of opportunity

The sector has entered a new phase of acceleration with governments and businesses alike making strategic investments to expand space technological capabilities. More than 4,500 objects were launched into space in 2025,[1] continuing the rapid growth in satellite launches, alongside landmark developments such as the Artemis II mission and the filing of SpaceX's historic IPO.

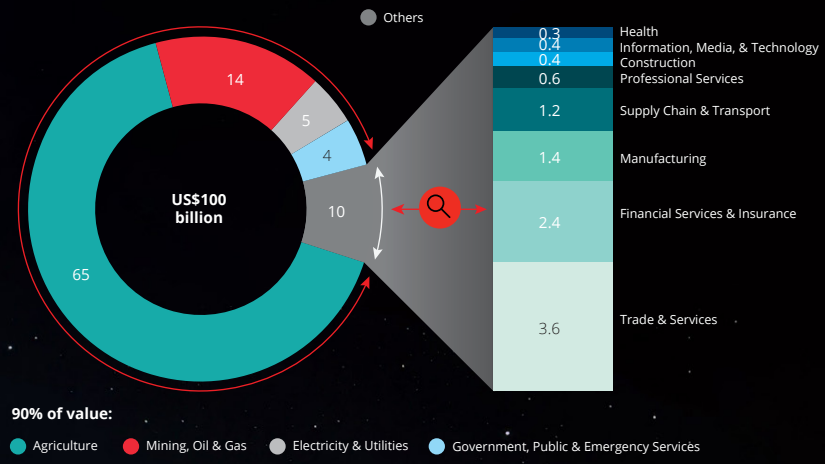
Understanding Southeast's Asia's $100 billion opportunity

Earth observation (EO) in particular is set to be a major driver of economic activity. The abundance of commercially-licensed satellite data and connectivity services has propelled adoption by non-space industries, from using satellite data to insure against wildfires through carbon modelling to experimenting with cutting-edge 6G connectivity. Through increased productivity and avoided costs, the contribution of EO-derived information to GDP is set to multiply from US$266 billion (nominal US dollars) to US$703 billion per year globally by 2030.[2] Asia-Pacific is leading this growth from US$111 billion to US$315 billion, a 184% increase.[2]

As a rapidly developing region with shifting land use, Southeast Asia is set to benefit greatly from EO. The economic value generated by these technologies is set to triple from $15 billion per year in 2023 to $45 billion per year by 2030.[3] Over this period, we estimate that increasing uptake of EO technologies could cumulatively contribute an additional US$100 billion to the region's GDP.[3]

1 United Nations Office for Outer Space Affairs (UNOOSA, 2026). Online Index of Objects Launched into Outer Space.
2 World Economic Forum (WEF, 2024). Amplifying the Global Value of Earth Observation.
3 Deloitte and Singapore Space & Technology Think Tank (Deloitte & SSTTT, 2025). Space to Thrive: Southeast Asia Space Industry on the Rise

Four land-intensive industries stand to capture 90% of the projected economic value, namely Agriculture; Mining, Oil & Gas; Electricity & Utilities; and Government, Public, & Emergency Services.[4]

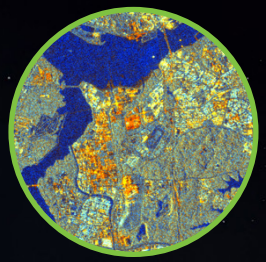


This publication spotlights how organisations are reaping value from technologies already commercially available today. From satellite communications to EO, the case studies featured represent exemplary industry leaders unlocking a unique competitive advantage — one which we term 'The Space Edge'.

4 Deloitte and Singapore Space & Technology Think Tank (Deloitte & SSTTT, 2025). Space to Thrive: Southeast Asia Space Industry on the Rise.

Four key types of satellite imagery

Optical Satellite Imagery captures reflected sunlight to produce high-resolution images of the Earth's surface across visible and near-infrared bands. Optical satellite imagery is used for mapping, infrastructure monitoring, and environmental analysis, but dependent on daylight and clear weather.



Synthetic Aperture Radar (SAR) is an active sensing system that uses microwave signals to image the Earth's surface. SAR operates day and night and penetrates clouds, making it ideal for all-weather monitoring and change detection.

NDVI (Normalized Difference Vegetation Index) is a numerical indicator of vegetation health that leverages the contrast between a plant's high absorption of visible red light for photosynthesis and its strong reflection of Near-Infrared (NIR) light.

Visible Infrared Imaging, used for nighttime satellite imagery, captures the glow of human activity and natural nocturnal phenomena. It is a powerful indicator of socio-economic activity.

Acknowledgements

We extend our heartfelt thanks to each individual, department, and organisation whose support and contributions have made The Space Edge possible.

Additional Credits

The information in the case studies are all credited to the featured solutions providers.

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Remote monitoring of crop health

Agriculture

Optical satellite imagery

The challenge

A large Indonesian agribusiness was struggling to aggregate satellite data from different providers. Frequent cloud obstruction and a lack of consistent satellite coverage made the region difficult to monitor reliably, delaying crop disease detection.

The solution

An Earth intelligence platform aggregating 50cm resolution commercial satellite imaging services from multiple providers.

This platform provided crucial monthly data across a 110-square-kilometre area, giving the client more consistent access to the data streams needed to run internal disease detection models.

The impact

This replaced a manual, time-consuming workflow with tools that speed up image adjustments, making comparisons across dates and locations more consistent and repeatable. Due to the platform's per-square-kilometre pricing and the flexibility to access multiple satellite constellations at a transparent list price, the client realised significant savings in cost and time compared to their previous manual approach.

Monitoring crops for early disease signals is critical to maximising harvests, but such signals are often subtle and uneven, and outbreaks can spread faster than inspection cycles. Consistent detection helps farms make targeted interventions to maintain crop yield and stabilise farm economics.

Case study provided by

SKYFI

https://skyfi.com/

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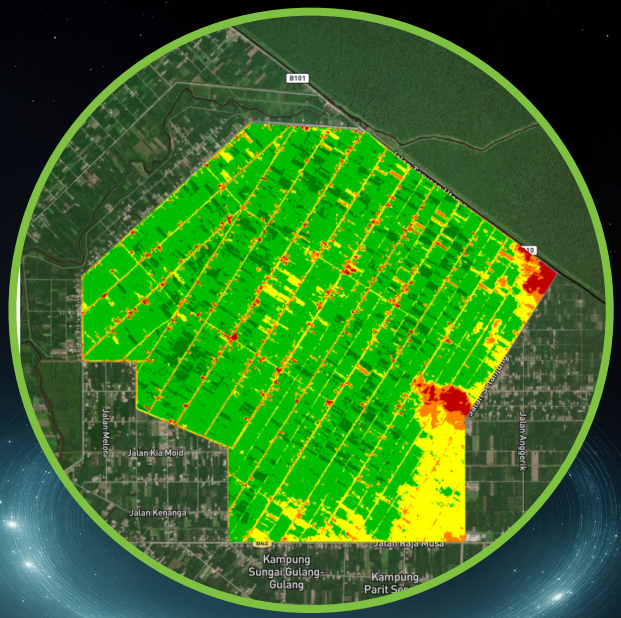
Satellite-based paddy health mapping for targeted interventions



Agriculture

Multi-spectral satellite imagery-based crop monitoring

The challenge

Smallholder farmers produce approximately a third of the world's food but often struggle to improve productivity due to fragmented land, inconsistent field conditions, and rising input costs.

Padiberas Nasional Berhad (BERNAS), Malaysia's authority responsible for managing the country's rice supply, needed a solution to support farmers with more structured, data-driven farming practices.

The solution

A dashboard and mobile farm management application, developed as part of the SMART Sawah Berskala Besar (SMART SBB) programme, to support farmers and field coordinators.

The application translates satellite data into regular crop health maps, offering insights on vegetation, soil moisture, nutrient levels, and overall crop performance. This enables earlier detection of issues such as uneven irrigation, nutrient deficiencies, and pest risks, while helping optimise the use of fertilisers and other inputs.

The impact

Following a successful pilot in Selangor involving 23 farmers, many of whom recorded improved yields, the solution has been scaled to nearly 1,000 farmers across multiple project sites, with the app now monitoring 19,000 farm plots. In parallel, additional features were integrated, connecting the 110,000 BERNAS-aligned paddy farmers for plot registration and access to advanced financing, while supporting broader digitalisation of Malaysia's agriculture sector.

Case study provided by

LC60

https://www.lc60.ai/

THE SPACE EDGE

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Methane leak monitoring using satellite data and GeoAI models

Energy, Resources & Industrials

Satellite-based GeoAI models

The challenge

An energy company in Southeast Asia needed to monitor methane emissions across its regional operations.

The solution

A remote sensing data platform which trains models to detect methane emissions and provides site-level alerts for operations teams.

The platform leverages and fuses disparate third-party commercial satellite methane data sets and on-ground sensor inputs to train a methane detection model that can be rerun as new observations arrive. This allows the client to monitor specific locations of interest to support regulatory compliance. Outputs are designed to fit existing geospatial workstreams, so mapping teams can validate, triage, and document issues in the same systems used for asset management and reporting.

The impact

This focus on interoperability targets the operational bottleneck of moving from detection to action, with the client expecting analysis time to fall from roughly 10 days of manual work to a few hours of model runtime.

Remote monitoring is critical to mitigating methane emissions from the oil and gas industry, as the gas has 28 times greater warming potential than carbon dioxide. Methane is colourless and difficult to detect, allowing leaks from extraction sites to escape directly into the atmosphere without easy detection.

Case study provided by

NIKA
The Spatial Computing Co.

https://www.nikaplanet.com/

THE SPACE EDGE

Deloitte.

Mitigating pipeline disruption risk with Earth observation

Energy, Resources & Industrials

Synthetic Aperture Radar & optical satellite imagery

The challenge

A major energy operator in Indonesia sought to monitor thousands of kilometres of pipeline right-of-way — the strip of land around pipelines reserved for their installation, operation and maintenance. The client aimed to monitor risks such as flooding, vegetation encroachment, unauthorised construction, and third-party intrusion.

The solution

An Earth observation-based monitoring system, drawing on a network of over 150 commercial satellites to maintain always-on monitoring.

The deployment followed a three-tier "tip and cue" workflow. The first tier provides continuous, weather-independent change detection using open source Sentinel-1 Synthetic Aperture Radar (SAR), which captures data day and night and penetrates cloud cover. When the system flags an anomaly, the second tier tasks commercial SAR-equipped satellites at higher resolution to confirm whether the change represented genuine activity. Only verified alerts advanced to the third tier: very high-resolution optical imagery with a resolution of 30cm, triggered when weather conditions permit, to provide visual confirmation and contextual detail that operations teams can use to act on an event.

The impact

Insights are delivered through a web-based platform, accessible without specialist GIS software. Users are able to triage events, validate detections against baseline imagery, and route confirmed issues directly into operational response workflows. This layered approach reduced the volume of costly high-resolution collections while maintaining broad, always-on coverage across the full corridor.

In the energy and utilities industries, monitoring pipeline right-of-way is critical to ensuring the steady supply of critical resources and fuels. Traditional aerial and terrestrial patrols remain costly and intermittent, leaving gaps of days or weeks between inspections.

Case study provided by

SKYFI

https://skyfi.com/

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Deloitte.

Remote construction progress monitoring in audits

Energy, Resources & Industrials

Optical satellite imagery

The challenge

An Indonesian mining logistics infrastructure operator conducting a financial audit of its assets needed to track and verify construction progress of a 92-kilometre hauling road in Southern Sumatra.

The solution

Deloitte supplemented its audit procedures by leveraging Sentinel-2 data to monitor and verify construction progress of the hauling road. Multiple satellite images were used to observe infrastructure development and assess whether reported progress aligned with subcontractor claims.

The impact

This approach enhanced the quality and accuracy of the valuation, allowing more frequent image captures of the asset, complementing on-site visits that would typically take three days. Relying on orbiting satellites also allowed the team to capture images under the best possible conditions, such as good weather and low cloud cover. Measurements of the road could be made and compared against historical images, resulting in more accurate readings.

Accurate estimates of construction progress can significantly impact the valuation of assets on financial statements, making monitoring a critical issue for management, auditors, and ultimately, investors.

Case study provided by

Deloitte.

https://www.deloitte.com/southeast-asia/en/services/consulting/perspectives/sea-space-practice.html

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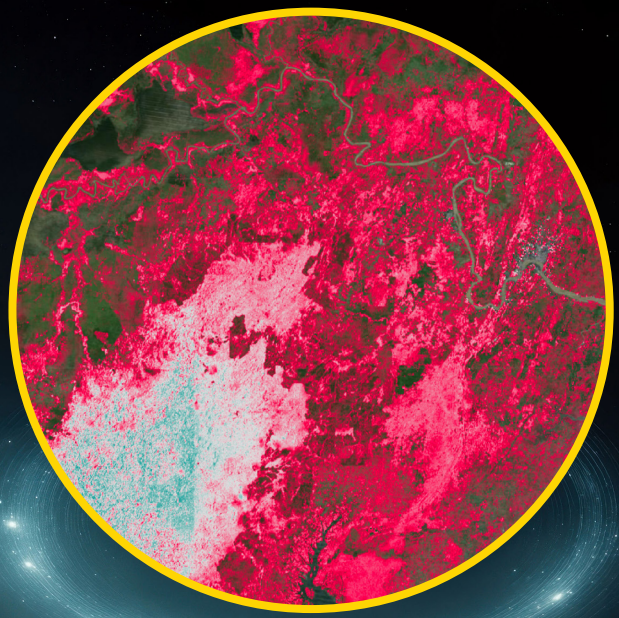
Remote geospatial analytics for carbon credit valuation



Energy, Resources & Industrials

Optical satellite imagery & LiDAR

The challenge

A Philippine carbon project developer needed to map the feasibility of a specific project and identify optimal sites for development.

The solution

A nature intelligence platform which runs carbon landscape assessments to optimise project boundaries and maximise sequestration potential.

Built to support the full project development lifecycle, the platform integrates tools such as optical satellite imagery and LiDAR into a single visual analytics interface with a configurable carbon calculator, enabling continuous monitoring. Users can generate exportable indicators such as historical forest loss, forest-cover stability, land-use or land-cover classes, and satellite-derived biomass and carbon proxies.

The impact

The project developer conducted early landscape analyses across more than 20,000 hectares, an area which would have been near impossible to assess using manual methods. In turn, they conducted iterative redraws of the project areas, paving the way for targeted site visits focused on validation, tenure, and social and legal constraints. Pre-assessment report preparation time was reduced by more than half, with core feasibility metrics delivered in seconds, compared to the weeks that they typically take to generate.

Monitoring, reporting, and valuation methodologies are essential for carbon credit mechanisms, assessing project feasibility and validating fieldwork results which are otherwise difficult to scale.

Case study provided by

ARKADIAH

https://arkadiahrestores.earth/

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Deloitte.

Satellite connectivity for remote river monitoring networks

Energy, Resources & Industrials

Direct-to-satellite IoT connectivity

The challenge

Malaysian nature-based carbon sequestration project developer Planters Bhd sought to improve its river water quality monitoring process in the Klang River, as their methodology required costly and frequent site visits.

The solution

A ground sensor terminal that leverages direct-to-satellite connectivity to send river and environmental readings to decision-makers without relying on mobile coverage.

The solution combines a low-power, long-range radio that aggregates local sensor data into a ground platform and dashboard for monitoring and alerts. This solution helps agencies and operators track conditions in remote basins, where manual checks and unreliable connectivity can delay action.

The impact

With 40 sensor terminals planned for deployment across 27,000 hectares of riparian and mangrove ecosystems, early indications estimate that water quality monitoring time will be reduced by 83%, from 240 to 40 worker hours per month. This will significantly lower operating costs.

Water monitoring in Southeast Asia is often dependent on manual inspection or isolated terrestrial sensors with limited connectivity, creating delays in early flood risk detection, environmental pollution monitoring, and operational monitoring.

Case study provided by

SPACEIN

https://spacein.com.my/

THE SPACE EDGE

Deloitte.

Property-level solar feasibility and ROI analytics for lending

Financial Services

Optical satellite imagery and geospatial analytics

The challenge

A Southeast Asian bank wanted to assess the energy generation potential for domestic rooftop solar photovoltaic installation to facilitate the issuance of green loans.

The solution

A property analytics solution that converts a customer address into a clear feasibility and financing-ready value proposition, supporting the institution's green financing initiative.

The solution integrated multiple data sets and applied address and boundary validation models to reduce friction from incomplete or inconsistent property information. Credit underwriters work through a simple user interface that validates and completes addresses, calculates total usable area, and recommends panel count and placement. The sizing logic incorporates sunlight availability, roof characteristics, and system efficiency assumptions, producing a financial overview of return on investment based on local electricity prices.

The impact

Through the solution, the bank was able to analyse over 15,000 properties in less than a week. The solar insights, particularly the financial projections, facilitated the provisioning of green loans, while reducing time to disbursement.

Leveraging satellite data to identify installation opportunities could overcome present challenges in fragmented property data and expensive expert site assessments. Satellite-derived insights can offer auditable, standardised analytics to unlock financing, underwriting, and customer decisioning bottlenecks.

Case study provided by

KUMI ANALYTICS

https://www.kumianalytics.com/

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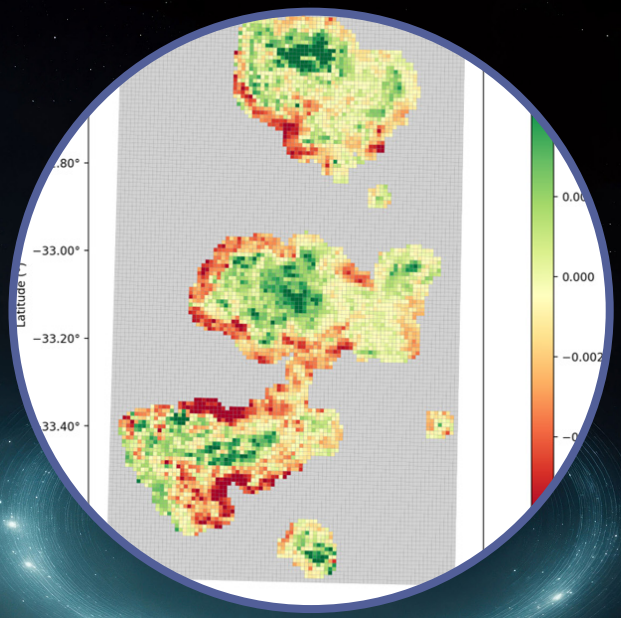
Wildfire loss and recovery analysis for carbon insurance



Financial Services

Optical satellite imagery & carbon modelling

The challenge

Carbon insurance provider Kita Earth needed a way to rapidly analyse and quantify wildfire risk to carbon projects to support more accurate insurance underwriting.

The solution

A product that analyses carbon projects across Southeast Asia to quantify potential biomass and carbon loss, and assess likely long-term regeneration trajectories.

The solution translated burn severity, biome type, and project conditions into decision-ready estimates of loss magnitude and recovery rates. These insights supported credit underwriting and claims decisions.

The impact

The solution provided Kita with a more accurate basis for evaluating how wildfires affect expected carbon performance, enabling better insurance underwriting decisions through improved quantification of losses and recovery potential. It also supports timely post-fire assessments amidst limited ground access, restrictive safety conditions, and uneven damage across a broad area. In addition, the solution delivers region-specific insight into forest recovery and satellite-enabled wildfire detection.

Though nature-based carbon projects are playing a critical role in climate risk mitigation, these projects face material risks from wildfires, which are increasingly unpredictable in Southeast Asia. Assessing these risks, however, requires highly complex modelling based on data which is often difficult to access without expensive manual surveys.

Case study provided by

KUMI ANALYTICS

https://www.kumianalytics.com/

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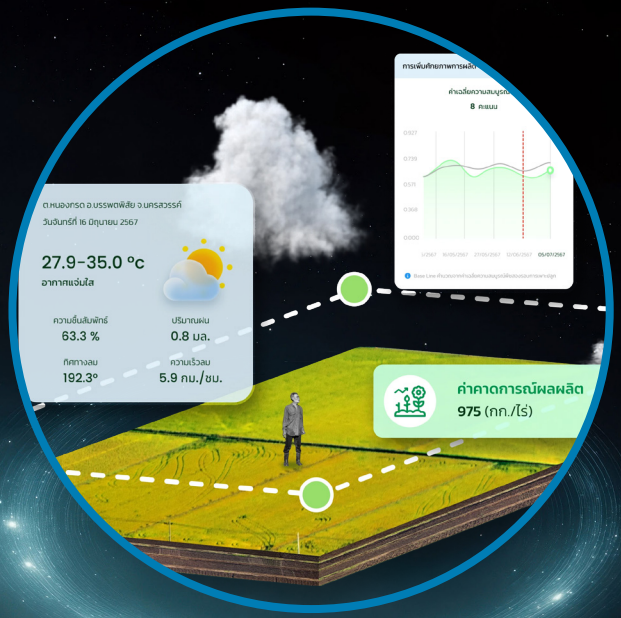
Democratising access to satellite-derived agricultural insights



Government & Public Services

Multi-spectral satellite imagery

The challenge

Agricultural productivity is critical in Thailand. The Geo-Informatics and Space Technology Development Agency (GISTDA) needed a way to support the country's smallholder farmers with access to timely, field-level insights for improving productivity.

The solution

A precision agriculture platform designed to support farmers with managing dispersed plots.

The platform integrates satellite imagery with public-sector data to provide simple, plot-level guidance across the crop lifecycle. Farmers can delineate field boundaries, track crop and planting dates, and receive satellite-derived updates on crop conditions, along with modelled estimates of soil nutrient status at approximately five-day intervals, subject to data availability.

These insights support more informed decisions on fertiliser application, irrigation scheduling, and harvest planning. Yield estimation is also available for key crops such as rice and sugarcane.

The impact

The platform has been adopted by over 50,000 users across Thailand, covering approximately 160,000–200,000 hectares of agricultural land. Reported outcomes indicate potential yield improvements of up to 5–10%, alongside more efficient use of agricultural inputs, although results may vary depending on local conditions.

By improving access to data-driven insights, the platform supports more efficient resource use, reduces costs, and enhances farm productivity.

Case study provided by

GISTDA

https://www.gistda.or.th/

THE SPACE EDGE

Deloitte.

Improving public transport network planning

Government & Public Services

Satellite navigation tracking

The challenge

The Malaysian government's public transport operator, Prasarana, needed a data-driven solution to forecast ridership outcomes for its Rapid Bus network in the Klang Valley and Penang before committing resources to service changes — decisions that previously took six to nine months to evaluate.

The solution

A mapping-based planning tool and predictive model that uses mobile movement data to predict ridership outcomes before resources are committed.

Planners modelled and compared alternative network configurations, shifting stop locations, changing frequencies, or adjusting the span of service (operating hours), against likely demand patterns before committing operational resources. By integrating movement-derived indicators with observed ridership, the approach supported a repeatable workflow for updating service as neighbourhoods and commuting patterns evolve.

The impact

The solution shifted bus network planning from a periodic, resource-intensive exercise into an ongoing capability that can now respond to how neighbourhoods and commuting patterns evolve. Scenario testing that previously took six to nine months to pilot can now be modelled in minutes with the network planning tool.

Southeast Asia's traffic congestion costs an estimated 2–5% of GDP annually, among the highest economic losses from urban mobility failure globally. Improving public transport is central to reducing that burden, cutting emissions, and expanding urban mobility for low-income communities.

Case study provided by

URBAN METRY

https://www.urbanmetry.com/

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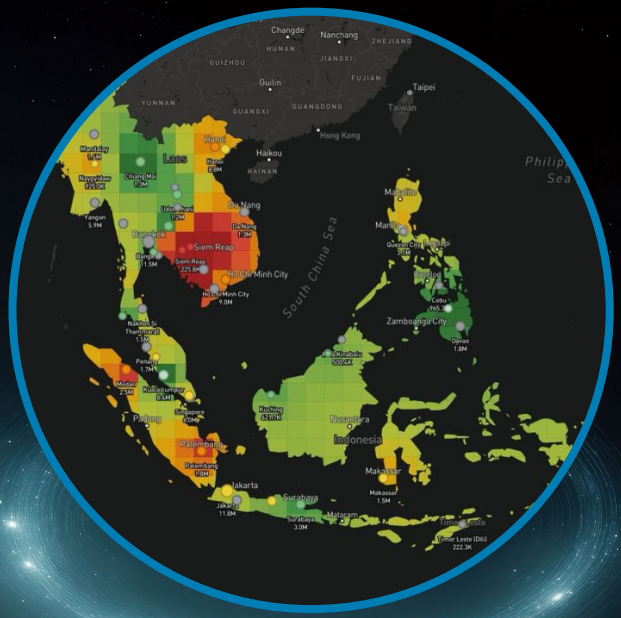
Integrating disparate geospatial data sources for security monitoring



Government & Public Services

Multi-source geospatial data

The challenge

A global security firm operating across Southeast Asia needed a way to understand location-based risk and threat assessments across broad regions at speed and scale for key clients such as embassies and energy infrastructure companies.

The solution

A platform with a single, unified, web-based workflow that pre-integrates over 70 global data sources, outputs standardised geospatial layers for operational mapping, and is operable with a chat-to-map workflow.

The platform automates event discovery, geocoding, normalisation, and classification, running parallel searches across risk categories and using multi-step validation to reduce errors. This permits analysts without specialised geographic information systems training to generate incident layers and actor-network maps quickly by typing what they need to know about risks and seeing results on a map.

The impact

During a pilot, a country-level assessment that previously took between two and five business days was completed in less than 10 minutes, shifting output from periodic, static reports to near-continuous monitoring.

In the security industry, geospatial intelligence is critical to visualising and analysing emerging risks. Pre-integration and AI processing of data sources significantly reduce the latency that typically disrupts highly time-sensitive risk assessment.

Case study provided by

GeoBIT

https://www.geobit.ai/

THE SPACE EDGE

Deloitte.

Radio frequency detection to counter dark vessels

Government & Public Services

Satellite-based radio frequency detection

The challenge

A Southeast Asian government needed a way to detect non-cooperative vessels that have intentionally turned off their Automatic Identification System (AIS) to remain invisible over the Spratly Islands.

The solution

A satellite constellation equipped with radio-frequency sensors which detect and geolocate emissions from maritime transmitters, delivering detections and insights through to analyst workflows and operational missions.

This approach complements cooperative tracking beacons by adding a non-cooperative monitoring layer that can be verified multiple times per day, helping teams reduce search areas and prioritise patrol or reconnaissance in locations with higher probability of undeclared ships.

The impact

Over a 15-day period during which the satellites completed between two and six revisits per day, they detected more than 1,100 non-declared positions and found clusters of unidentified vessels outside normal shipping routes. In some areas, “dark ship” rates, or the proportion of ships not declaring themselves, reached 92% — activity that was not visible via standard tracking systems.

Monitoring unidentified ships is critical for both upholding national security and biodiversity. Approximately 75% of industrial fishing vessels are invisible to traditional monitoring systems. RF is, therefore, a useful tool that governments and private actors can consider.

Case study provided by

unseenlabs
— THE BRIGHT SIGHT

https://unseenlabs.com/en/

THE SPACE EDGE

Deloitte.

Securing connectivity during disaster relief

Government & Public Services

Geostationary communication satellites

The challenge

Following a 7.7-magnitude earthquake in Myanmar's Mandalay city, the Singapore Civil Defence Force's (SCDF) Operation Lionheart needed a reliable means of restoring internet communication to power response operations.

The solution

'Satpack' units — rapid set-up satellite terminals based on very small aperture terminals which can connect directly to a high throughput geostationary satellite.

The SatPack units were set up in as little as 15 minutes by trained personnel, without the need for any specialised heavy equipment. The units provide a rapidly deployable access layer that can operate independently of terrestrial telecommunications infrastructure. These units were critical in supporting search and rescue during disaster relief operations.

The impact

Over an 11-day operation, the deployment supported operational coordination, real-time situation updates, and communications back to SCDF Command, helping to re-establish a functional command-and-control loop when terrestrial connectivity was disrupted. In turn, this enabled faster decision cycles, improved responder safety, and restored communications in a zero-infrastructure zone.

Reliable networks are critical in the early disaster phase, when responders require connectivity for mapping, logistics, and safety communications. Network infrastructure is often damaged during natural disasters, while surviving networks are congested by mass consumer usage.

Case study provided by

KACIFIC the heart of broadband

https://kacific.com/

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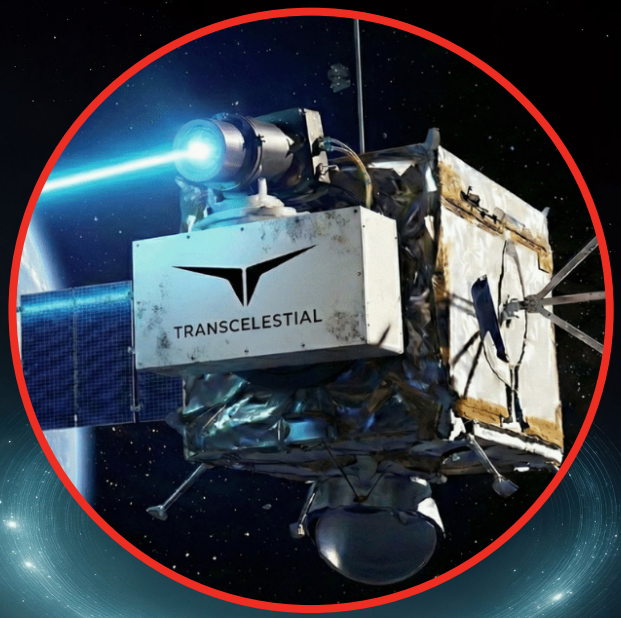
Advancing experimental communications infrastructure



Technology, Media & Telecommunications

Laser communications-equipped satellites & optical ground stations

The challenge

Barcelona-based research centre i2CAT needed a way to test advanced 6G and non-terrestrial network (NTN) technologies in real space conditions.

The solution

A research satellite with a laser communications terminal and the necessary corresponding optical ground station, creating a complete space-to-ground link that enables faster data transmission.

The impact

This satellite was part of the 6GStarLab mission, Europe's first Low Earth Orbit laboratory for 6G NTN technologies. This setup fills a critical infrastructure gap and allows researchers to test 6G and NTN concepts directly in orbit rather than relying solely on lab environments.

6GStarLab addresses a regional infrastructure gap by adding optical ground capability where none previously existed, enabling live space-to-ground laser link communications experiments. As an end-to-end, remotely accessible testbed, it supports the real-world validation of emerging technologies, from satellite virtualisation to 6G protocols and secure optical links.

Case study provided by

TRANSCELESTIAL

https://transcelestial.com/

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Deloitte.

Expanding connectivity in remote regions

Technology, Media & Telecommunications

Very small aperture terminals

The challenge

The Philippine Department of Information and Communications Technology sought to expand connectivity in remote communities in Northern Luzon despite weak satellite ground station infrastructure.

The solution

A high-throughput, geostationary satellite-based internet network system installed across key public service sites.

Based on very small aperture terminals (VSATs) — two-way satellite ground stations with small dish antennas — the solution can be installed in as little as three hours, making it ideal for remote, mountainous, and island environments.

The impact

Over 1,100 sites were rolled out across Northern Luzon, improving connectivity from previously limited or non-existent access to speeds of up to 40 Mbps. This initiative enabled free public Wi-Fi to over 130,000 people across 150 public health facilities, 150 indigenous communities, and remote villages, supporting telemedicine, digital services, and disaster-resilient communications.

VSAT-based satellite broadband helped overcome a lack of terrestrial communications infrastructure by delivering connectivity directly to remote locations, without the need for extensive ground networks. This supports universal access goals, strengthens disaster preparedness, and promotes more equitable regional connectivity.

Case study provided by

KACIFIC
the heart of broadband

https://kacific.com/

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