

**USB SBRI
Feasibility Studies**
*Overview of SBRI
Projects*



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Overview of Unlocking Space for Business Programme



‘Unlocking Space for Business’ is a UK Space Agency pilot programme launched in October 2023 to support businesses to:

- **Better understand and prioritise** how innovations in satellite data and services, combined with complementary data sources, can drive businesses benefits
- **Connect** with leading data suppliers, aggregators, technology integrators and insight providers
- **Apply** for Government funding to support the delivery of benefits from satellite data and services, through pilot projects, data procurement or partnerships

 The focus sectors have been **Financial Services** and **Transport & Logistics**

What has been on offer for businesses through this programme?

Information Hub	Insight and Networking Events	Exploration Workshops	Learning and Development	Funding Call
<p>Access to insights on how businesses can unlock value from satellites, with examples of activity from across the world</p>	<p>Interactive events that bring together customer and supplier ecosystems to connect and explore business opportunities</p>	<p>Expert perspectives to help your business identify, prioritise, and prepare to further benefit from satellite data and services</p>	<p>Online and in-person learning to enhance business capabilities in buying, integrating, and exploiting satellite data and services</p>	<p>Apply for Government funding to launch innovative pilots, acquire new data, and start delivering benefits for your organisation</p>
<ul style="list-style-type: none"> • Insights and global success stories on how businesses are benefiting from satellite data and services • Information about the programme and opportunities to get involved • Insights provided through Events, Workshops, Learning & Development and Funding Call 	<ul style="list-style-type: none"> • Expert panels and live demonstrations from leading satellite data and service providers • Enhanced connections and collaboration opportunities with suppliers and integrators • Cutting-edge discussions and help shape UK direction on new use cases 	<ul style="list-style-type: none"> • Tailored expert guidance on potential areas where satellite data and services could drive significant impact • Discussions on how sat data can help address key business challenges for your organisation • Identification of Business case and delivery plan with cross-functional stakeholders 	<ul style="list-style-type: none"> • Access to a range of experts on how to buy and maximise the value of data and services • Online learning materials on the topics of choice • Better understanding of the success factors required for organisation's journey 	<ul style="list-style-type: none"> • Funding to support partnerships and projects using satellite data and services • Support to launch pilots and turn opportunities into reality for your business • Brand strengthening opportunities as a leading innovator

Who are the organisations that engaged with the USB programme?

<p>350 unique organisations engaged through USB programme initiatives</p>	<p>160 Of the participating organisations were from 'non-space' sectors</p>	<p>35 were publicly listed companies</p>	<p>27 end-users participated in exploration workshops</p>
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Transport and Logistics



Transport & Logistics

Maritime trade vessel monitoring
AI maritime trade vessel monitoring platform development



Situation

- Maritime organisations are required to actively **monitor their operations to avoid deceptive shipping practices and mitigate against financial penalties and reputational risks**. However, the maritime supply-chain sector struggles with **obtaining real-time provenance data and actionable intelligence** for regulatory compliance needs.
- This is crucial for supporting the **increasing demands of sanctions and export control compliance programmes**, as well as emerging national environmental, social and governance (**ESG**) corporate reporting rules.
- The proposed solution, **the Vessel Transparency Index (VTI™)**, developed through this feasibility study, aims to enhance transparency and compliance of shipping practices by utilising **Earth observation, artificial intelligence and machine learning** to monitor and predict potential non-compliance in international waters.

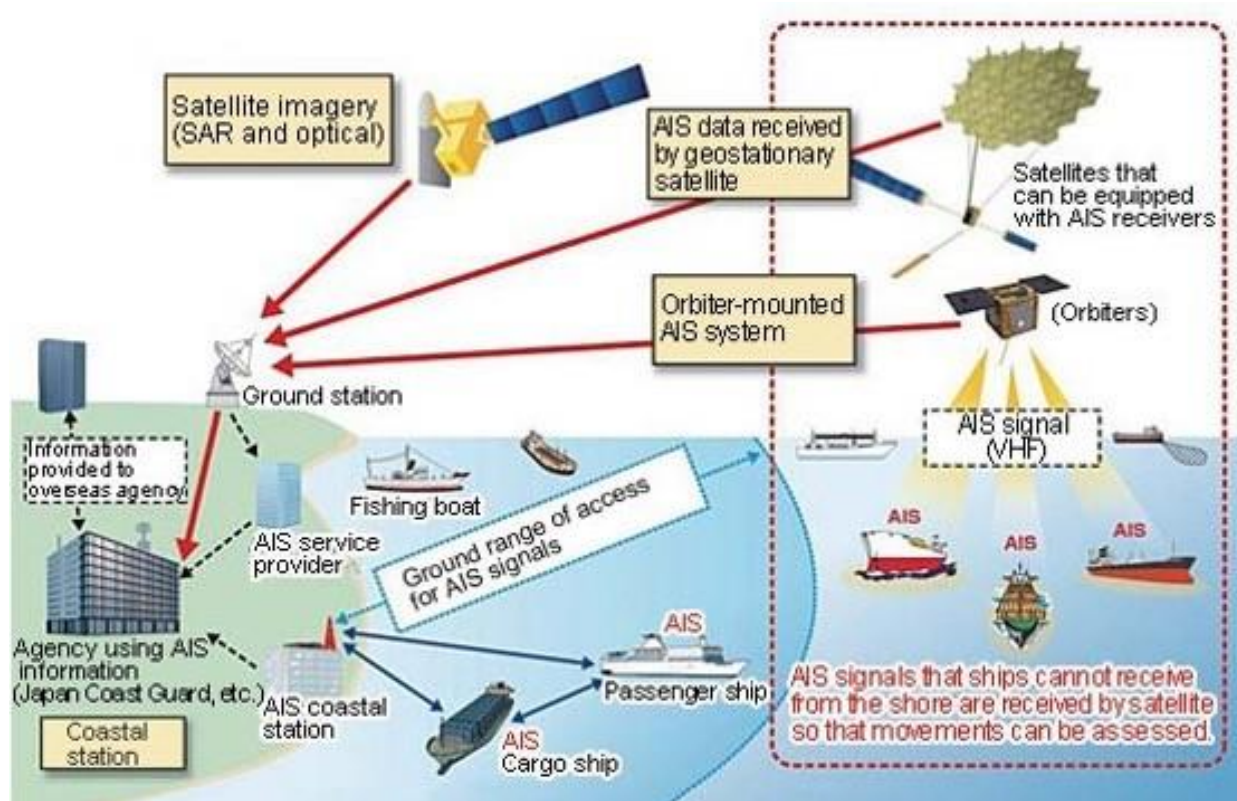


Actions from SBRI Feasibility Study

- 1 Development**
The solution was developed using a structured methodology, based on the Information Systems Audit and Control Association's (ISACA) **Capability Maturity Model Integration framework**, adapted from the telecoms industry.
- 2 Prototyping**
Initial prototypes were created **using existing data handling and analytics processes**, with data provided by various industry sources.
- 3 Field-testing**
The solution was **tested in a controlled environment** using AWS cloud infrastructure, whilst collaborations with **commercial users**, including insurers, helped to provide **applications and technology validation**.

Solution from SBRI Feasibility Study

This integration was innovative in several ways:



- Enhanced data interpretation**
Proprietary algorithms and machine learning resulted in **real-time EO data processing advancement**.
- Proactive enforcement**
This integration enabled proactive enforcement and compliance in **global insurance**.
- Robust monitoring**
Combining satellite and terrestrial data created a robust monitoring system, crucial where Automatic Identification System (AIS) data is vulnerable.
- Cost-effective compliance**
AI distinguished in a cost-effective manner between natural AIS non-collection and deceptive practices.



Transport & Logistics	<h2 style="margin: 0;">Maritime trade vessel monitoring</h2> <p style="margin: 0;"><i>AI maritime trade vessel monitoring platform development</i></p>	BolgiaTen
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Business benefits from SBRI Feasibility Study

<p>Enhanced compliance</p> <p>Helps maritime companies ensure compliance with international sanctions.</p>	<p>Risk mitigation</p> <p>Provides financial institutions with accurate risk assessments, enabling better premium calculations.</p>	<p>Operational efficiency</p> <p>Improves route planning and operational decision-making, leading to cost savings and Sustainability targets.</p>	<p>Market differentiation</p> <p>Offers a competitive edge by providing a unique, risk management solution.</p>
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Other sectors could also benefit from the Vessel Transparency Index:

<p>Environment monitoring</p>	<p>The technology can be adapted for monitoring environmental compliance, such as illegal fishing, pollution or decarbonisation.</p>
<p>Logistics & Supply Chain</p>	<p>The technology allows for enhanced tracking and monitoring capabilities, which can improve supply chain transparency and efficiency in other sectors.</p>
<p>Regulatory compliance</p>	<p>The methodologies can also be applied to other industries requiring stringent regulatory compliance, such as Finance, Media & Healthcare.</p>

Lessons learnt from SBRI Feasibility Study

Data quality & integration	<p>Ensuring high-quality data and effective integration from multiple sources is crucial for accurate analysis and insights.</p>
Stakeholder collaboration	<p>Engaging with a broad range of stakeholders early in the project helps align the solution with industry needs and regulatory requirements.</p>
Scalability	<p>Designing solutions with scalability in mind from the outset can facilitate broader adoption and application across different sectors.</p>

Next steps and commercialisation plan

MVP development	Pilot testing	Feature expansion
<p>Focus on developing a minimum Viable Product (MVP) tailored for the insurance industry, particularly for tankers.</p>	<p>Collaborate with marine insurance companies to pilot the MVP and gather feedback.</p>	<p>Gradually introduce additional features, such as predictive risk modelling and integrated incident response planning.</p>
Partnership	Market launch	User training & support
<p>Strengthen partnerships with global marine insurance companies, technology providers, and regulatory bodies.</p>	<p>Prepare for a broader market release, targeting a wider array of vessels and extending beyond the initial tanker focus.</p>	<p>Provide comprehensive training to ensure smooth adoption and effective use of the Vessel Transparency Index.</p>

Engagement with USB Programme

Networking Events	<p>BolgiaTen attended all three of the 2024 Networking Events held at the National Oceanography Centre in Southampton and PwC in London.</p> <p>“We found all three events to be very useful and tremendously helpful”</p>
Supplier Insight Events	<p>BolgiaTen also joined a panel discussion at the Supplier Insight Event at Space Park Leicester in October 2024 to provide an overview of their project.</p>

Transport & Logistics

AI-powered maritime software application
Detecting real and 'ghost' ships in NovaSAR maritime data



Situation

- Surrey Satellite Technology Ltd (SSTL) provides valuable information to **shipping, customs and fishing authorities** for **maritime applications** such as asset tracking, monitoring of illegal fishing, smuggling, and pollution.
- Key challenge in utilising this data is **distinguishing between ships and 'azimuth ambiguities'**, which can cause **'ghost' ships to appear in the data**.
- Craft Prospect Ltd (CPL) has built on their existing collaboration with SSTL to develop the **PHANTOMS application** to meet this challenge, which uses Artificial Intelligence (AI) to **quickly identify ship objects in a maritime scene and determine real ships from 'ghost' ships** in NovaSAR 'Maritime Mode' data.

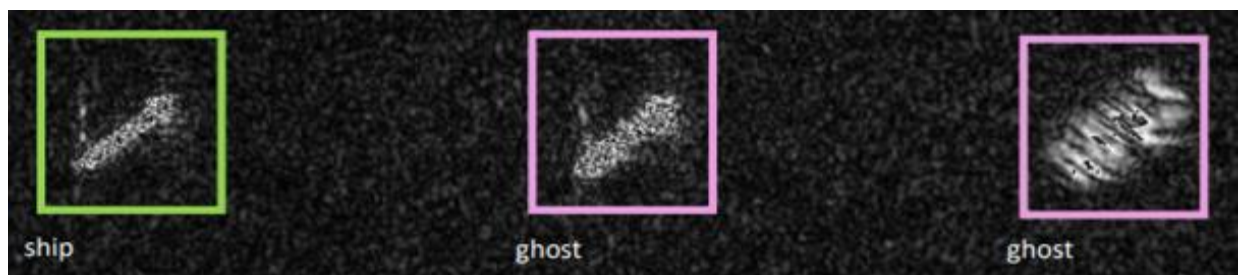
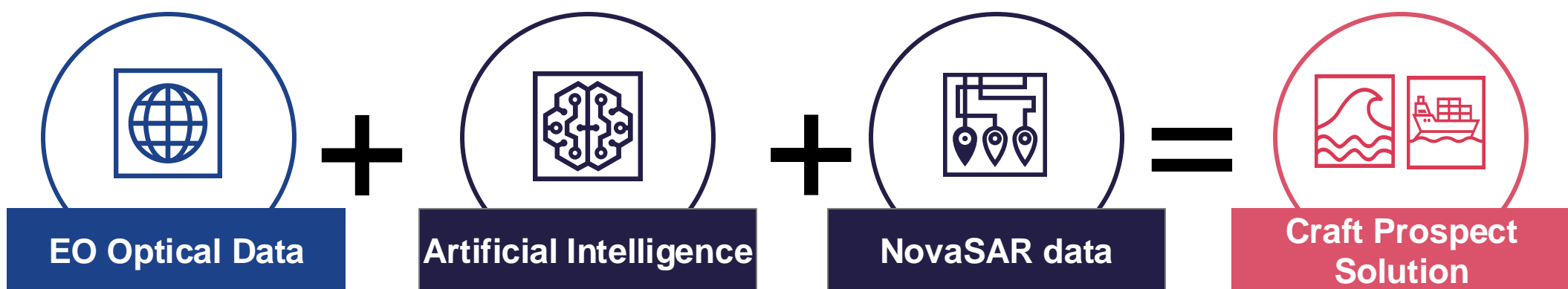


Figure: Ship and "ghost" detection in NovaSAR 'Maritime Mode' data.

Actions from SBRI Feasibility Study

SSTL acted as lead customer to inform use case definition, primary/ secondary applications and requirements specification. **The development process included three key milestones:**

1 Requirements Review

The PHANTOMS application use cases and requirements were scoped during a **kick-off workshop with SSTL**.

The Requirements Review was held with SSTL to validate:

- Primary and secondary use case definition.
- Functional, performance and test requirements.
- High level test scenarios.
- Autonomy assurance approach.

2 Test Readiness Review

CPL engaged with SSTL again for the **Test Readiness Review** to:

- Update on **progress and direction** of the application development.
- Assure the **generated development and test datasets** for the application.
- Validate the Test Plan and share the preliminary Test Report.
- Workshop the **future roadmap for further work and opportunities**.

3 Final Review

In a final review, CPL delivered a **live demonstration of the PHANTOMS application** to key stakeholders at SSTL, followed by a Q&A session.

The review also provided:

- **The Exec Summary** of the activity and key results to SSTL.
- A review of the **future technical and commercial roadmap**.
- Discussion of **commercial and teaming agreements**.

Engagement with USB Programme

Learning & Development

Craft Prospect attended each of the online Learning & Development Webinars for the T&L sector.

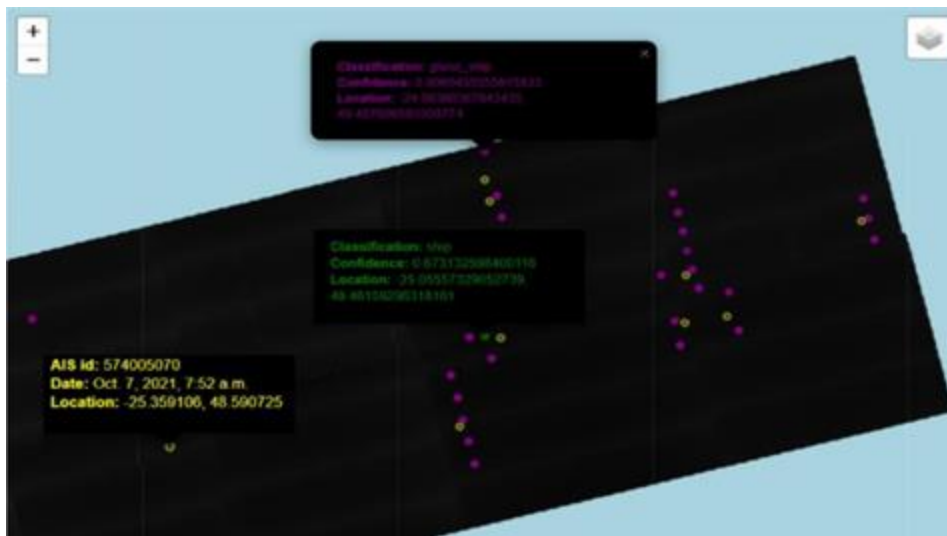
Transport & Logistics

AI-powered maritime software application

Detecting real and 'ghost' ships in NovaSAR maritime data



Business benefits from SBRI Feasibility Study



The PHANTOMS application is **novel**, offering:

- Machine learning (ML) enabled application to **automate the detection process** and quickly determine “real” from “ghost” ships in NovaSAR ‘Maritime Mode’ data.
- The solution can be **deployed by the various customers of the data** within or alongside their own processing systems. This solution also provides **user-friendly, assured data products**.

Figure: Scene view showing detection: ships (green), ghost ships (purple). Available AIS data is also plotted (yellow).



Faster ship detection

The application returns the locations of real ships in **under 5 minutes**, offering a time saving of **between 10-20 minutes** per scene when compared to visual inspection.



Non-destructive

Processing carried out by the application is **non-destructive**, enabling **assured decision-making** and further analysis.



Easier analysis

The application **visualises data products from all stages** of the processing chain (plus metadata and AIS data points) via interactive filter **for ease of analysis**.



User-friendly

It is **user-friendly** and **does not require expert knowledge** of NovaSAR ‘Maritime Mode’ data to carry out ship and ambiguity detection.

Lessons learnt from SBRI Feasibility Study

Unavailable data

AIS data is **often not available for vessels in open ocean** from any source, whether open or commercial.

Time lag

AIS data is **not a reliable source of ground truth**, due to the **time lag** between AIS capture and main satellite data capture. Ships may not always share regular and accurate location data.

Complexity of data

Labelling of NovaSAR Maritime Mode data is not straightforward. **Expert advice or expertise with the data is required**.

Dealing with anomalies

Handling of **coastal area scenes is challenging**, as land azimuth anomalies and their interaction with ocean areas (e.g. the appearance of a bright land collocated with a bright ship).

Next steps and commercialisation plan

Commercial agreement

- A **value-based approach**, focused on quantifiable improvements to the end-user, is proposed for pricing the PHANTOMS application.
- The next step (in discussion) is a **limited trial with a customer, comparing PHANTOMS to their existing solution** in terms of speed, accuracy, skilled user requirements and confidence.

Onboarding

- Future version of the application developed under this activity will be designed for deployment on-board **NovaSAR missions**, adding value by improving **information latency** to the ground.
- While raw data captured onboard could not be explored during this activity, data compression was implemented as a secondary measure to reduce the size of data products. This allowed measurement of the impact on the application’s performance and informed the Technical Roadmap created during the activity.
- There are two main avenues for onboarding a future version of the application: it can **either run onboard on L1 images** or be **developed to run directly on raw data**.

Transport & Logistics

Connected Transport Services

Enhanced on-board connectivity for light-rail industry



Situation

- The **performance and requirements of current systems for light-rail on-board connectivity is faced with several challenges**, include difficulty monitoring the accurate position of tram movement in real time, immediate detection and response of de-rail events and system redundancy implementation. Addressing these challenges was the cornerstone for defining the Automated Survey, Localisation and Navigation (ASLAN) project system architecture.
- The ASLAN project aimed to develop a **Proof of Concept (PoC) Technology Readiness Level 3 (TRL3) prototype On-Board Unit (OBU) for transport and logistics applications**, utilising satellite connectivity and Position, Navigation, and Timing (PNT) technologies. ASLAN has been specifically configured for the Coventry Very Light Railway (CVLR) urban tram system.
- This project focused on achieving **high accuracy, precision, and availability for terrestrial transport systems by integrating terrestrial and satellite connectivity and PNT technologies**, reducing reliance on fixed control infrastructure.

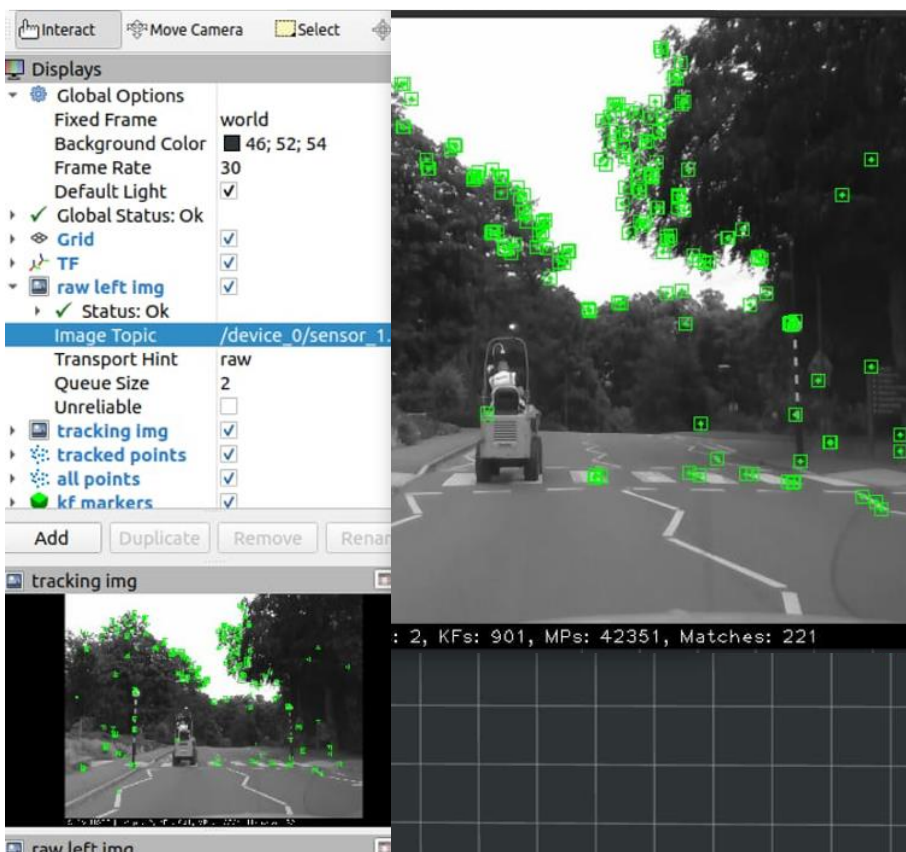


Actions from SBRI Feasibility Study

- 1 Collaborative Development**
Partnered with CVLR, BCIMO, Coventry City Council (CCC), Murphy Geospatial Services (MGS), and Warwick Manufacturing Group (WMG) to develop and prototype the solution.
- 2 Initial Consultations**
Conducted consultations with CCC, MGS, and WMG to gather valuable insights into user needs, which were then translated into system requirements.
- 3 Prototyping and Trials**
Prototyped the system at the University of Nottingham, conducting trials using both standard vehicles and rail-mounted vehicles.
- 4 Field Test**
Performed field tests on BCIMO's rail test track in Dudley, including a 1km tunnel, to validate the ASLAN system under challenging conditions and ensure alignment with industry needs.

Solution from SBRI Feasibility Study

This solution was innovative in several ways:



Modular PoC Prototype OBU

Developed a **PoC OBU with a modular design** that integrates Global Navigation Satellite Systems, Inertial Measurement Units (IMU), and Inertial Navigation Systems (INS). This allows for high-precision positioning and navigation in transport applications.


Flexible Plug-and-Play Capabilities

The system included various **modules for sensor control, data collection, processing, and connectivity**, enabling flexible plug-and-play interfaces. This modularity supports testing and optimising different instrument configurations to meet specific user needs.




Hybrid Communication System

Combines **satellite and terrestrial communication services to ensure reliable, high-precision positioning through Real-Time Kinematics technology**. This ensures continuous connectivity even in areas where terrestrial networks are weak or unavailable.



Transport & Logistics	<h2 style="margin: 0;">Connected Transport Services</h2> <p style="margin: 0;"><i>Enhanced on-board connectivity for light-rail industry</i></p>	
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Business benefits from SBRI Feasibility Study

 <h4>Enhanced Operational Efficiency and Safety</h4> <p>By improving accuracy, precision, and availability in positioning and navigation, the ASLAN system reduces reliance on fixed control infrastructure, which is often vulnerable to technical failures and security threats. This leads to increased operational efficiency and safety for transport systems.</p>	 <h4>Cost Savings and Flexibility</h4> <p>The modular design allows for adaptable use in various sectors beyond rail transport, including autonomous vehicles, logistics, and smart city infrastructure. This flexibility can lead to cost savings as the system can be tailored to meet different operational requirements without extensive modifications.</p>	 <h4>Market Differentiation and Competitive Advantage</h4> <p>The advanced integration of satellite and terrestrial communication services positions the ASLAN system as an innovative solution in the market, appealing to end-customers in the transport and logistics sectors.</p>
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Lessons learnt from SBRI Feasibility Study

<h4>Satellite Communication Importance</h4>	<p>Satellite communication is crucial for maintaining reliable connectivity where terrestrial networks are weak or unavailable, ensuring continuous data flow in challenging environments. SatComms proved essential for both Real-Time Kinematic (RTK) data transmission and position updates.</p>
<h4>Hybrid Communication Systems</h4>	<p>Testing revealed that even in urban environments, terrestrial communication networks may not always meet the demands of RTK transmission or position updates. This highlights the importance of integrating satellite services as a fallback or complementary solution to ensure uninterrupted communication.</p>

Next steps and commercialisation plan

<h4>CPC Clean Futures Accelerator</h4>	<h4>Data Collection and Optimisation</h4>
<p>Secured a place on the Connected Places Catapult (CPC) Clean Futures Cohort 2 Accelerator to potentially install and test prototype systems on various vehicles.</p>	<p>Use installed systems to gather data and improve the efficiency and performance of battery-powered light rail vehicles and traffic management, moving towards commercialisation with end-customers</p>

Engagement with USB

<h4>Networking Events</h4>	<p>GVL participated in multiple Networking Events and attended the Supplier Insight Event at Harwell in October 2024.</p> <p><i>“These events were extremely useful for us and enabled us to engage with a multitude of stakeholders that have subsequently help us to move forward in our business.”</i></p>
<h4>Supplier Insight Event</h4>	



Transport & Logistics

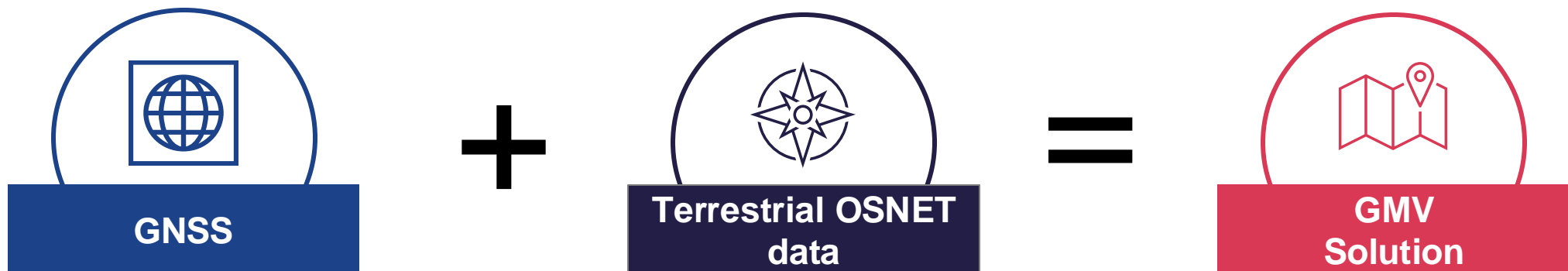
Connected Transport Services

Enhanced position data (GNSS) for autonomous T&L



Situation

- The feasibility study addressed the challenge of **improving the accuracy and reliability of position data for transport and logistics**, particularly autonomous transport. The main issue was the **need for precise and dependable GNSS data for safety-critical applications like autonomous driving and drone deliveries**. The integration of the Ordnance Survey OSNET network with GMV's PPP corrections service aimed to enhance the precision and reliability of the GMV GSharp® corrections service in the UK.
- The project sought to combine **satellite GNSS data with terrestrial data from the OSNET network of continuous operating GNSS reference stations**. This integration provided an **unprecedented density and assurance of GNSS data across the UK, which was previously uneconomical for GMV alone to collect**. The combination of these data sources aimed to enhance the accuracy and reliability of the GNSS corrections service.

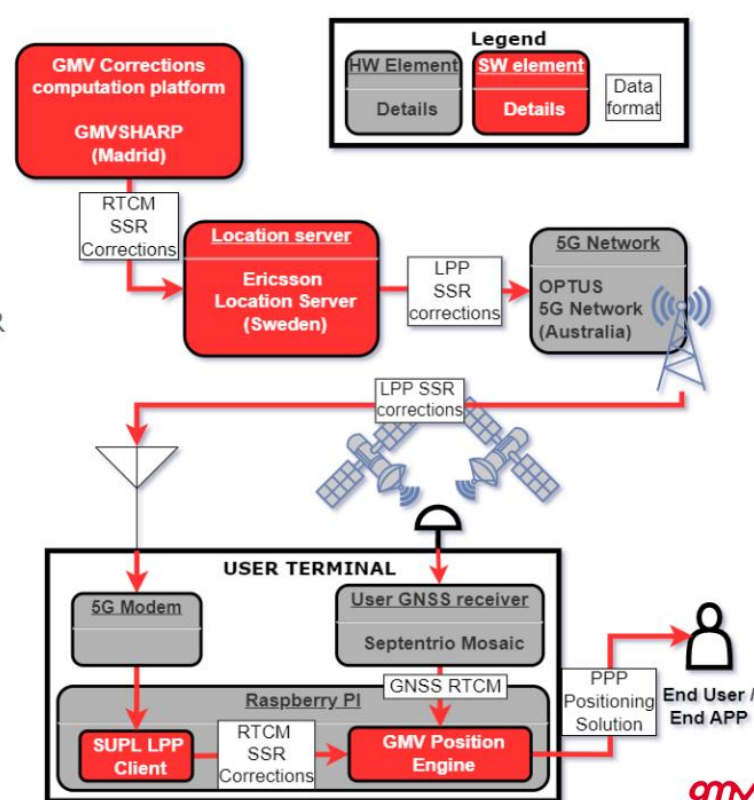


Actions from SBRI Feasibility Study

- 1 Setup of GMV Position Engine**
Access to OSNET data and integration into GMVSharp® Service
- 2 Static Monitoring**
Deployed the GMV position Engine across multiple stations throughout the UK to establish a robust testing infrastructure. Conducted static tests to evaluate the baseline performance improvements
- 3 Testing for Performance**
Configured two distinct position engines for dynamic tests along routes: one utilising only the GMV Network and the other incorporating both GMV and OSNET station data
- 4 Integration and Validation**
Successfully integrated OSNET data into the GMV GSharp® service. This step demonstrated significant improvements in achieving high-accuracy GNSS solutions.

Solution and business benefits from SBRI Feasibility Study

This solution was innovative in several ways:



Integration of data

Integration of OSNET data into the GMV GSharp® service, resulting in **improved positioning accuracy and data integrity for safety-critical environments**. This enhanced positioning performance supports the goal of providing a high-value, safe and accurate navigation service for autonomous transport applications.

Data Feeding

Data from GMV's reference stations and OSNET Network is fed into the GMV GSharp® Datacenter through Casters, **improving algorithm performance, and ensures consistent GNSS data quality**.

Network Densification and Algorithm Optimisation

The integration of additional network stations highlights the benefits of **network densification and the potential for further algorithm optimisation**. This provides new insights into maintaining consistent performance across various scenarios and can lead to **spillover benefits** for other industries like agriculture and construction.



Transport & Logistics	<h2>Connected Transport Services</h2> <p><i>Enhanced position data (GNSS) for autonomous T&L</i></p>	
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Lessons learnt from SBRI Feasibility Study

Importance of Integrating Multiple Data Sources	<p>Other organisations exploring the use of satellite data/services can learn the importance of integrating multiple data sources to enhance accuracy and reliability. Organisations can achieve higher quality and more dependable data by leveraging diverse data inputs, which is vital for safety-critical applications.</p>
Case-by-Case Analysis	<p>The project highlighted the necessity of case-by-case analysis to determine if high accuracy solutions meet specific user needs. Tailoring solutions ensures that GNSS data is relevant and effective for various applications, improving overall satisfaction.</p>

Next steps and commercialisation plan

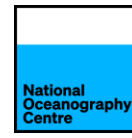
Further Densification of the Network	Optimisation of Algorithms	Commercialisation Plan
<p>Expand the network by adding more reference stations to improve data accuracy and reliability.</p>	<p>Refine algorithms to ensure consistent performance across various scenarios and applications.</p>	<p>Target Original Equipment Manufacturer and Tier 1 suppliers with the enhanced GMV GSharp® service to support autonomous driving and other safety-critical applications.</p>

Engagement with USB

Networking Events	Exploration Workshops
Learning & Development	Supplier Insight Event

GMV attended the Networking event for the T&L sector in Manchester as a demonstrator and panellist. GMV also attended the Supplier Insight Event at Space Park Leicester in October 2024.



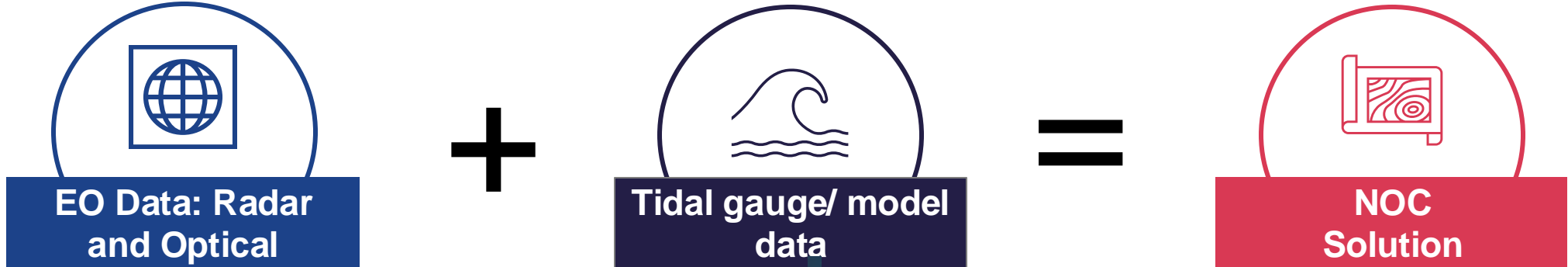


Transport & Logistics

Smart Asset Monitoring
Increased shipping channel management

Situation

- PEEL Ports Group, a statutory harbour authority for eight UK ports, is responsible for **navigational safety, marine environment protection, and various marine services**. In compliance with the Port Marine Safety Code, they must **regularly survey and maintain navigable channels, and monitor sea or riverbed changes**.
- **Intertidal topography is highly dynamic** due to tidal cycles and meteorological events, making **conventional survey techniques like aerial LiDAR and in-situ surveys costly and limited in scope**. These constraints hinder a comprehensive understanding of coastal dynamics and the impact of anthropogenic and natural pressures, posing challenges to maintaining safe shipping channels and meeting carbon reduction and operational efficiency goals.
- The project aimed to develop **innovative, cost-effective methods to enhance the understanding of coastal dynamics**. By leveraging satellite data from Copernicus Sentinel 1 and 2, combined with terrestrial observations, the project sought to produce accurate intertidal elevation maps, reduce climate-related risks to port operations and support PEEL Ports in achieving their net-zero ambitions.

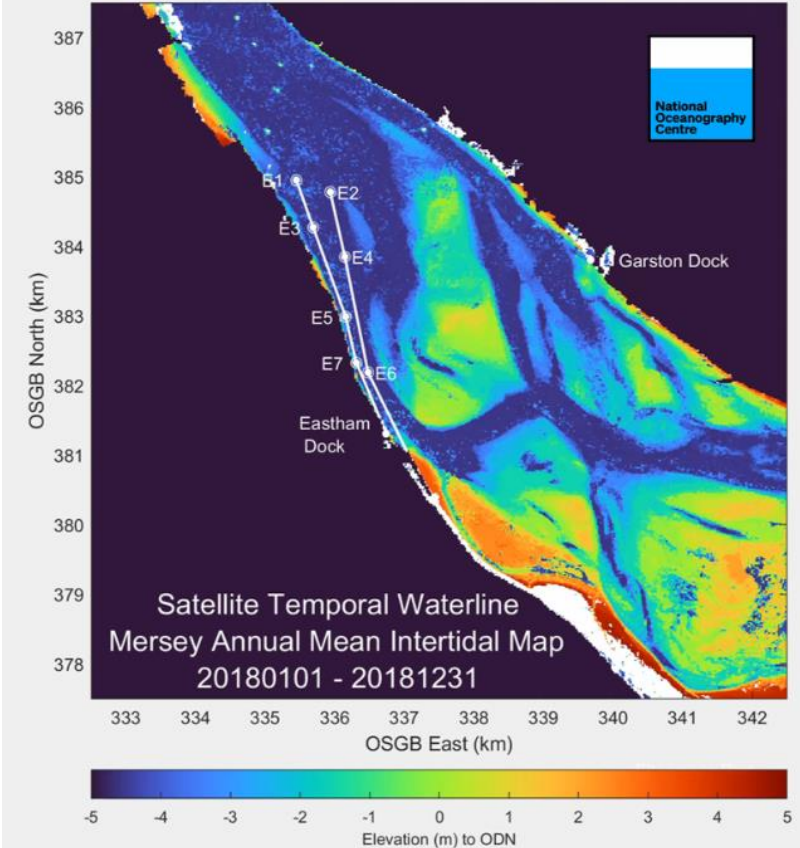


Actions from SBRI Feasibility Study

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| <p>1 Engagement and Dialogue</p> <p>Initiated and maintained ongoing dialogue with PEEL Ports and other potential end-users from the coastal monitoring and flood and coastal erosion risk management community since 2019</p> | <p>2 Collaboration with CCO</p> <p>Engaged with the Channel Coastal Observatory (CCO), leveraging their extensive network of coastal monitoring practitioners to refine and validate the method</p> | <p>3 Application of the Tool</p> <p>Utilised the SBRI funding to collaborate with key partners on the practical application of the tool, focusing on addressing the accuracy of water level inputs</p> | <p>4 Addressing Limitations</p> <p>Concentrated efforts on improving the accuracy of water level inputs, which are crucial for the precision of the generated outputs</p> |
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Solution from SBRI Feasibility Study

This solution was innovative in several ways:



Improved Accuracy of Water Levels

Developed a new approach to resolving spatial variability in tidally influenced water levels, leveraging data from the recently launched SWOT satellite. The **accuracy and quality of the outputs from Earth Observation – Temporal Waterline have been significantly improved** and the data has been applied to a quantitative assessment of sediment dynamics in the Mersey Estuary.

Enhanced Computational Performance

Improved the performance and computational speed of the data processor, making the process of generating intertidal elevation maps more efficient. **Quicker data processing** and the **ability to handle larger datasets**, facilitating more frequent and comprehensive coastal monitoring.

Quantitative Assessment of Sediment Dynamics




Applied the data to a quantitative assessment of sediment dynamics within complex estuarine environments, specifically in the Mersey Estuary. This application provides a deeper understanding of sediment movement and accumulation patterns.

Satellite Temporal Waterline Mersey Annual Mean Intertidal



Transport & Logistics	Smart Asset Monitoring <i>Increased shipping channel management</i>	   
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Business benefits from SBRI Feasibility Study

 Enhanced Data Quality <p>Significant improvements in the accuracy and quality of the outputs from intertidal topography mapping, providing more reliable data for port operations.</p>	 Proactive Maintenance Planning <p>Growing time series of data allows for insights into natural and anthropogenically driven patterns of movement, enabling proactive, preventative dredging and other maintenance activities.</p>	 Disruptive Vertical Referencing Method <p>Developed a novel method for accurately establishing vertical referencing of tides and mean sea level, addressing a long-standing issue in the marine and coastal sector.</p>
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Next steps and commercialisation plan

Publication	Scientific development	Expansion of TideMorph Method	Funding and Operational Models
<p>Publish the generated datasets, methods statement and two case studies on the CCO website.</p>	<p>Further improve the accuracy of spatial variations in water levels by incorporating changes in tidal curve and amplitude.</p>	<p>Extend the application of the full TideMorph method to other areas of the UK, leveraging operational data from the SWOT satellite.</p>	<p>Establish an external steering group to identify funding sources and sustainable operational models for EO-TWL.</p>

Engagement with USB

Networking Events	Exploration Workshops
Learning & Development	Supplier Insight Event

NOC attended a Networking Event and attended the Supplier Insight Event at Harwell in October 2024.

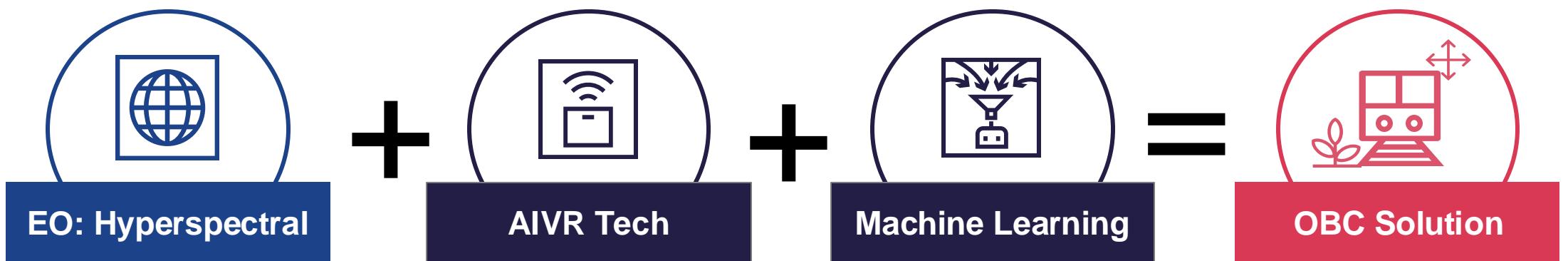




Transport & Logistics **Condition monitoring of climate risks** 
Advanced Satellite Infrastructure Monitoring system development

Situation

- **Increased frequency of climate-related incidents, reduced funding, reduction of the workforce** and the **high risk** of personnel being lineside has identified the need for rail infrastructure to be monitored in a smarter digital way.
- One Big Circle (OBC) developed an advanced solution using **Machine Learning, Automated Intelligent Video Review (AIVR)** and **satellite data** to identify vegetation hotspots, land movement and flood risks along critical rail infrastructure. OBC will share data outputs and supplier information with Network Rail.



Solution from SBRI Feasibility Study

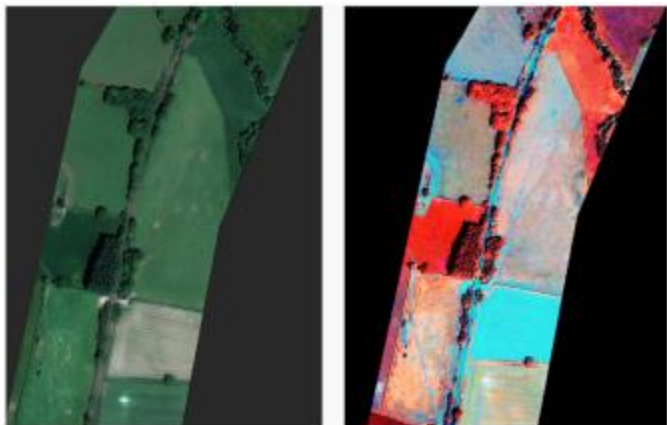
There were **3 primary use cases** identified early on in the project:

- 1 Vegetation encroachment on track and lineside assets**

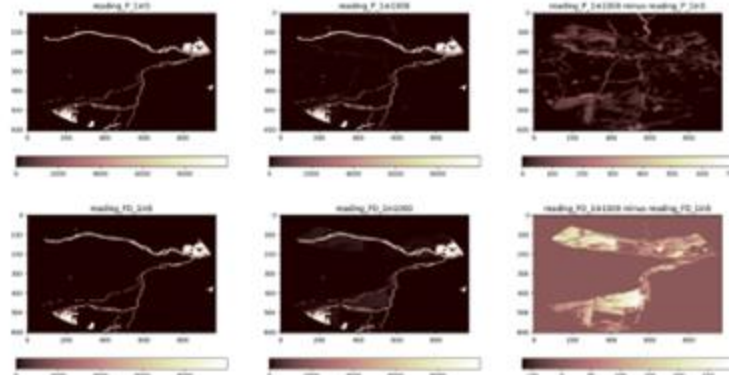
Hyperspectral data will be tested in areas where they have already identified **high vegetation impact** and will enable the **monitoring of canopy coverage, movement** and **tree species**. This **aligns with train borne data** already being captured that monitors contamination on the railhead during leaf fall season.
- 2 Vegetation monitoring**

Earth Observation Imagery data will be tested to identify **localised low spots of flood defences** which could allow overtopping (i.e. high-risk flood sites). This aligns with data already being captured from **static remote cameras** strategically installed throughout the network to monitor **trackside bodies of water for flood warnings**.
- 3 Land movement velocity monitoring**

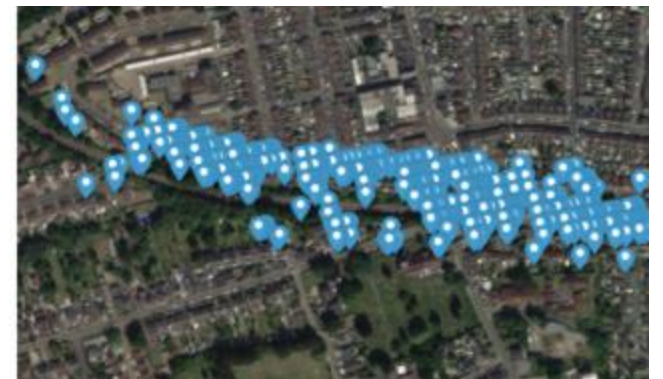
3D & InSAR Satellite Imagery will be tested in areas that have been subject to **land movement** or have the characteristics of potential land movement i.e. embankments and cuttings. This **aligns with train borne data** and **geometry data** already being collected from in-service and monitoring trains.



Left: Detection of **vegetation encroaching** on the tracks
Right: **Infrared** channels are then utilised to **validate** that the detections are accurate.



High resolution flood risk data assigns a **risk score based on yearly probability of a flood event** for each eighth-mile section of track, predicting flood occurrences.



AIVR Infrastructure Monitoring by Satellite (IMS) collaborates with SatSense to provide highly accurate **land movement** data. The system is able to derive whether movement is accelerating or decelerating.

Transport & Logistics **Condition monitoring of climate risks** 
Advanced Satellite Infrastructure Monitoring system development

Actions from SBRI Feasibility Study

<p>1 Worked with stakeholders</p> <p>Ran a number of working groups to help specify, guide and critique output produced by IMS.</p>	<p>2 Produced Key Documents</p> <p>Specifications and test reports were created to ensure all stakeholders were aware of intent and project execution.</p>	<p>3 Exploration events</p> <p>Ongoing exploration events, generating product interest, tool feedback and improvements.</p>	<p>4 Worked with suppliers</p> <p>Worked with known suppliers to Network Rail such as SatSense and Fathom.</p>
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Business benefits from SBRI Feasibility Study

 <p>Dynamic presentation of satellite data in AIVR platform</p> <p>The integration into the AIVR platform enables users to view satellite imagery alongside both up-to-date and historical train footage.</p>	 <p>High stakeholder engagement</p> <p>Regular workshops with National Rail representatives shaped the project's development based on user preferences. Expert advice from relevant departments also informed decision-making.</p>	 <p>Land movement use case win/insight</p> <p>During land movement analysis, an area with accelerating land shifts was identified and reported to National Rail stakeholders, who confirmed its critical status, validating the pipeline's effectiveness.</p>
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Lessons learnt from SBRI Feasibility Study

This was OBC's first time working with UKSA, and utilising satellite data for this purpose. Key learnings include:

Plan for weather	The UK is often cloudy, so allow time when trying to obtain visual imagery. Archival data can be incredibly helpful , and the savings are vast.
Explore providers	Explore as many providers as possible , as there are so many offerings out there and allowance for this exploratory activity can have massive benefits in the data you receive.
Partner wisely	Look for partnerships with companies that may already be looking at the data you are after to avoid recreating the wheel and enhance industry collaboration.
Launch flexibility	Be flexible with launch dates and allow more time on the front end to accommodate for other parties set-up times.
Financial flexibility	Allow flexibility for the financials as these were slow to set up .

Next steps and commercialisation plan

<p>Creation of marketing collateral</p> <p>Share the one-page overview of the IMS system detailing its functionality with the AIVR platform.</p>	<p>Demonstrations of the IMS system</p> <p>Presented the IMS system at networking events to drive focus with AIVR user groups.</p>	<p>Further inSAR exploitation</p> <p>IMS system will continue through public procurement; introductory talks with Network Rail on future tenders.</p>	<p>Further commercialisation</p> <p>Their technical approach ensures the AIVR platform is ready for any 'Phase 2' procurement.</p>
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Engagement with USB

Networking Events		<p>OBC attended the Unlocking Satellite-Driven Insights Networking Event for the T&L sector.</p> <p><i>"A great and highly insightful session."</i></p>
	Supplier Insight Events	



Financial Services



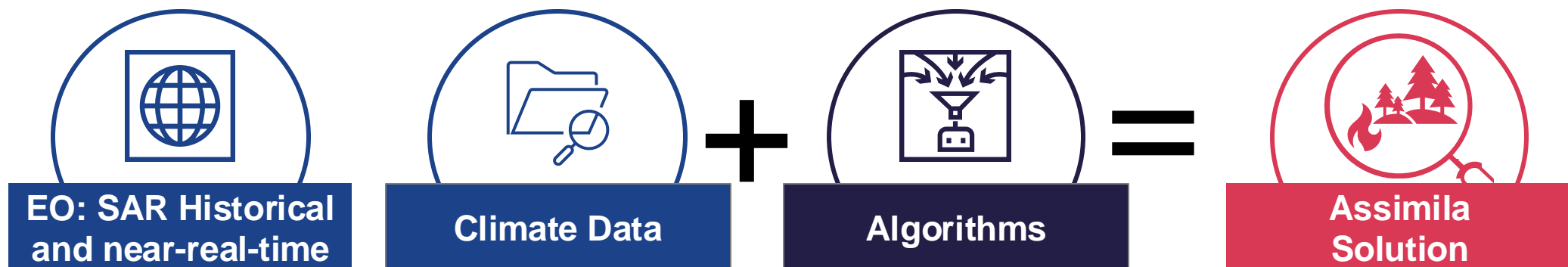
Financial Services

Climate Risk, Resilience and Response
Understanding wildfire scale for insurance



Situation

- **Concern about the scale and severity of European wildfire occurrence is increasing significantly.** As yet however, there are no widely used or accepted European wildfire risk models to assist the understanding wildfire risk, hampering efforts to create appropriate financial solutions.
- This project was aimed at assessing **the technical and commercial viability of a new Earth observation (EO) service** to help insurers, insurance brokers and risk managers **understand the scale and severity of European wildfires.** Assimila worked with Aon to help them understand how European wildfires may affect their portfolio of insurance coverage.
- Insights are delivered through a combination of both historical and near-real time satellite data with climate data. These are processed through sophisticated algorithms that integrate the data to enable a view of wildfire hazards.



Actions from SBRI Feasibility Study

1 In-person workshops

Understanding Aon's requirements was a crucial first step in the development of a solution. This was achieved through an in-person workshop and follow up discussions attended by representatives of key user groups.

2 Hackathon

Once a prototype data product had been developed by Assimila, an in-person 'hackathon', where **Aon could interact with the prototype data products**, was held, helping to hone the product development to meet Aon's key business requirements.

3 Final Project Meeting

A final project meeting was held to assess the project solution and ensure that a **follow-up action plan was in place.**

Solutions and business benefits from SBRI Feasibility Study

This solution was innovative in several ways:



Graphical illustration of a wildfire hazard index prototype

Wildfire Hazard Index

The primary proposition was the development of a wildfire hazard index, integrating a variety of historic and near-real-time earth observation data. This index provides **valuable, actionable insights tailored for finance and insurance stakeholders.**


Usable Outputs

The service delivers outputs that are directly relevant and useful for finance and insurance stakeholders. This helps these stakeholders make **informed decisions regarding risk management, pricing, and investment.**

Detailed Fire Dynamics Data

The secondary proposition offers a **package of detailed fire dynamics data.** This allows clients to **assess risk exposure for existing insurance portfolios**, enabling more accurate risk assessment and potentially more effective mitigation strategies.



Financial Services	Climate Risk, Resilience and Response <i>Understanding wildfire scale for insurance</i>	 
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Lessons learnt from SBRI Feasibility Study

Alignment with commercial needs

Ensure that the **proposed service addresses the specific challenges and pain points of the commercial organisation** by conducting thorough research and detailed discussions.

Understanding service requirements

Spend time thoroughly **gathering and documenting service requirements with the commercial organisation**, including current and future needs. Engage key stakeholders early and regularly review the requirements to ensure a shared understanding.

Next steps and commercialisation plan

Continue development

Continue development of the **prototype wildfire data products** in partnership with Aon

Explore utilisation

Explore the **best utilisation of a service**

Identify routes

Identification of **effective routes to commercialisation**

Engagement with USB

Networking Events

Exploration Workshops

Learning & Development

Supplier Insight Event

Assimila attended the **‘Unlocking Satellite-Driven Insights’** event for the T&L sector, where they spoke about the WISE project as part of a panel discussion. They also participated as a panellist at the Supplier Event in Harwell in October 2024.



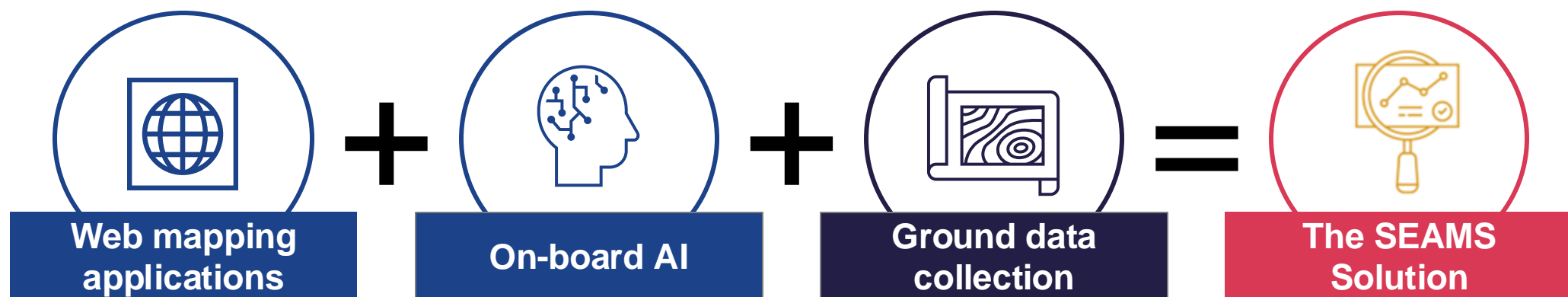
Financial Services

Sustainable Business and Compliance
Risk analysis and monitoring of Natural Assets



Situation

- Satellite data combined with AI technologies has immense potential for **mapping and assessing the natural world, predicting environmental risks, monitoring changes, and designing mitigation measures**. Despite advancements in these capabilities, **these technologies are currently underutilised** across sectors, leading to critical limitations in sector development and service adoption. **This issue is notable in financial services**, where interest in sustainable investments is rising, but the use of space data remains limited.
- This project demonstrated a highly novel methodology for **reducing costs in planning and risk assessment of new natural assets**. This allowed for **rapid assessment of projects aimed at the creation of carbon or biodiversity credits / units**. The project **provided an end-to-end demonstration of ground-based validation of AI mapping data** generated on board satellites. The intention is to reduce the overall field effort associated with these projects by providing pre-processed mapping for verification.



Actions from SBRI Feasibility Study

1 Technology integration

Integration of ongoing developments at the partner organisations

2 Use case definition

Definition of a use case for demonstration; Woodland existing stock and opportunity mapping was selected, due to market demand driven by carbon credit generation and the established forestry sector

3 Field test

Completion of a field test, which involved several key steps: end to end process of a desk-based order, tasking and classifying satellite data, and validating this satellite data through field teams using a mobile application



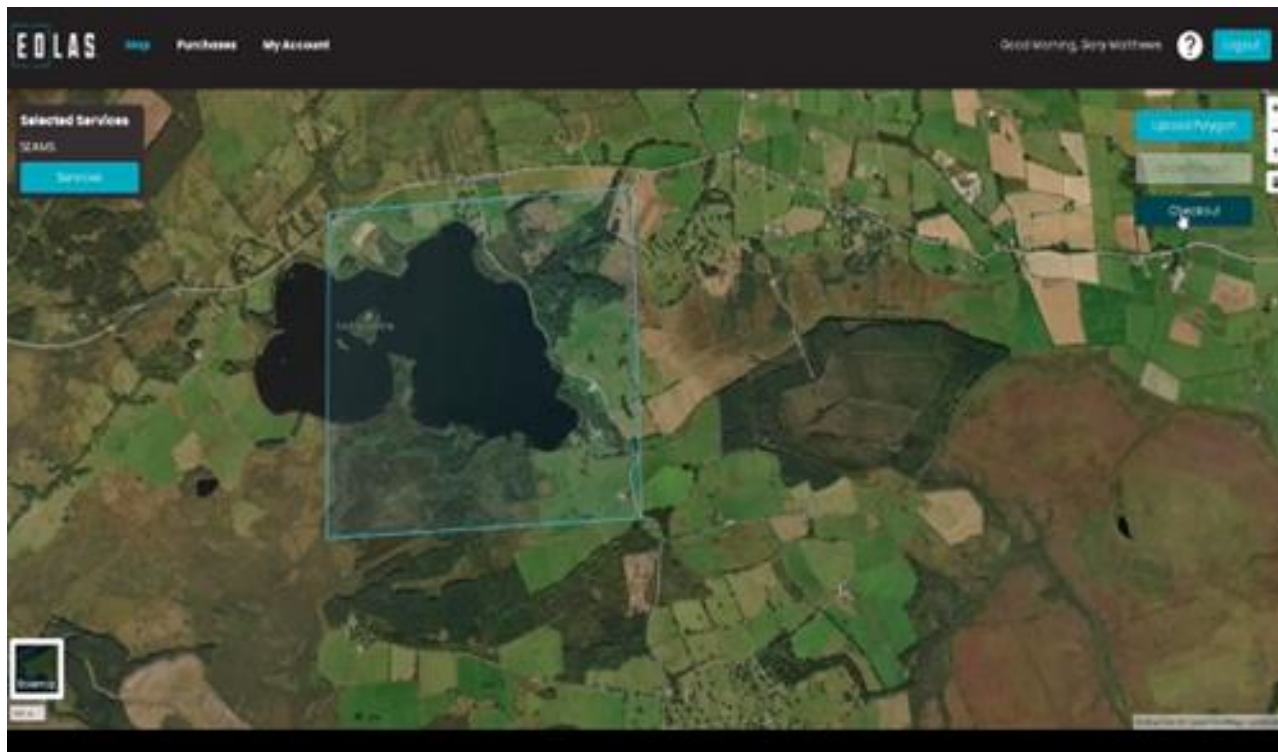
Financial Services

Sustainable Business and Compliance
Risk analysis and monitoring of Natural Assets



Solutions and business benefits from SBRI Feasibility Study

This solution was innovative in several ways:

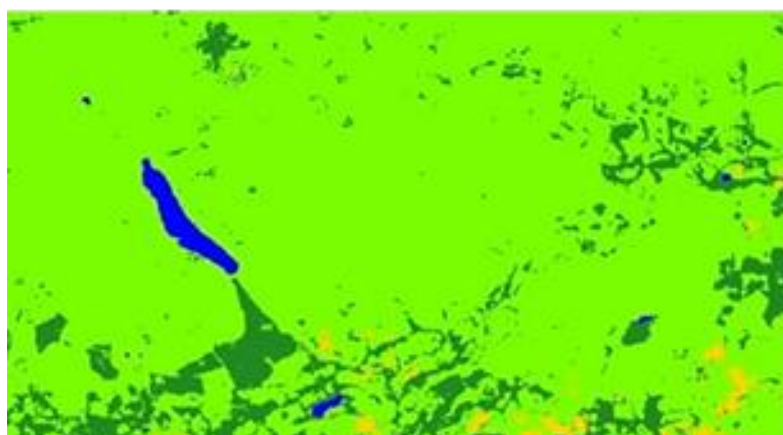


Demonstration video

The project output was a **demonstration video utilised for wider engagement targeted towards** finance sector supply chain.

Web based mapping tools

Web-based mapping tools and mobile applications were used to **reduce the field effort by 50%**, therefore reducing cost associated with survey activity.



Enhanced capabilities

Enhanced capabilities for environmental consultancy through advanced mapping tools, and potential for real-time satellite tasking via mobile applications.

Order placed using EOLAS Web Mapping (Top), image classified using Craft Prospect satellite systems (bottom left), areas validated using field app (bottom right)

Next steps and commercialisation plan

Customer demonstrations

Continue showcasing services and **gathering market feedback** through launch of Beta versions

Commercialisation

The **web mapping elements** of the project will be commercialised

Further development

Field based satellite tasking and field delivery may require further development to implement on orbit

Engagement with USB

Networking Events

EOLAS attended several USB Networking Events for the FS sector.
“The USB Networking Events have led to follow on projects partnering with organisations operating within the sector.”



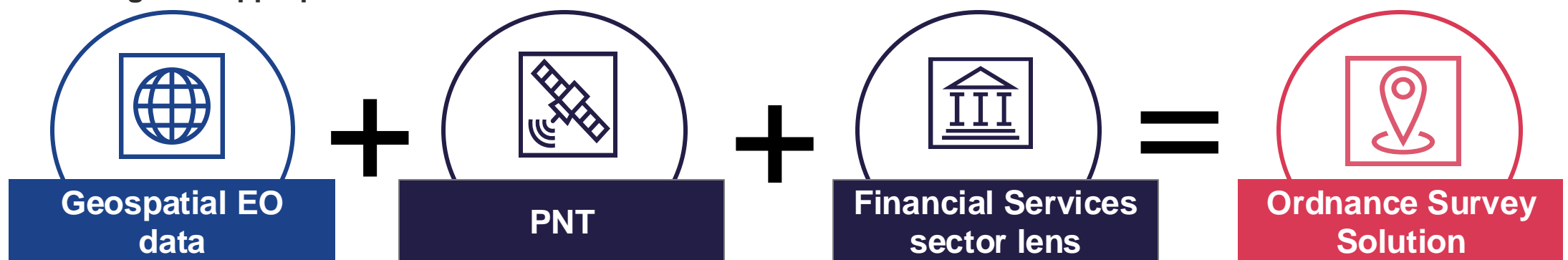
Financial Services

Asset location and risk assessment

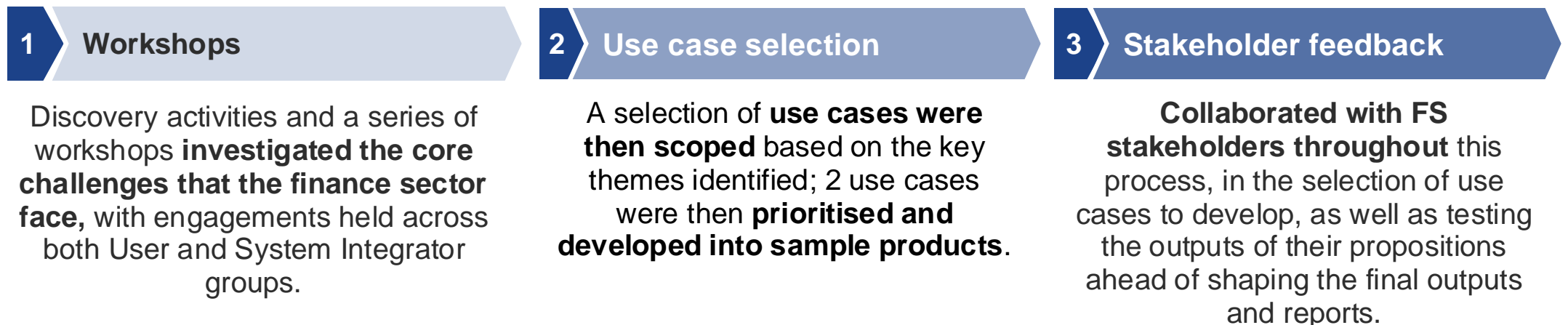
For agriculture, utilities, manufacturing and property portfolio management

Situation

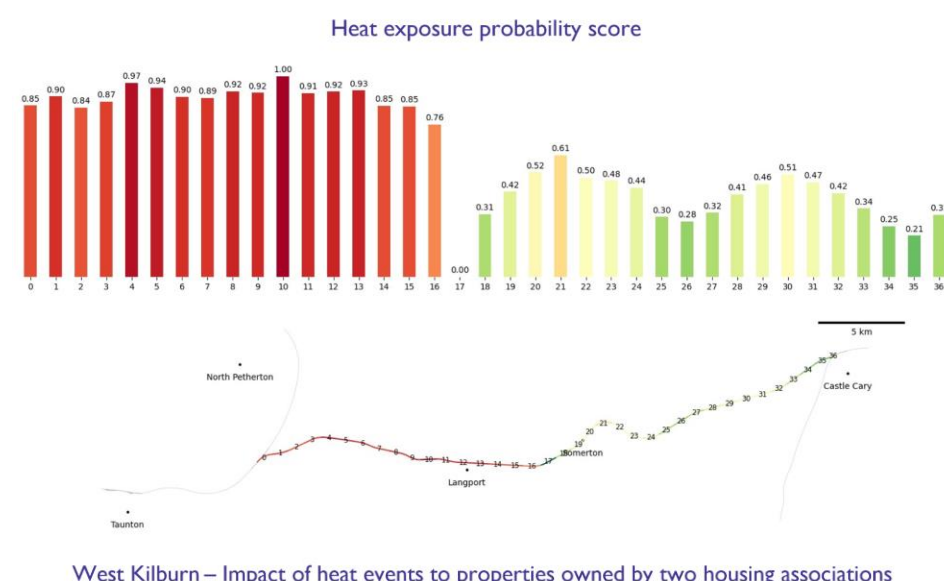
- The project aims to **help address the disconnect between financial institutions and asset location by integrating geospatial data with EO insights to create a unified system**. It involves understanding how geospatial, Earth Observation (EO), and Position, Navigation, and Timing (PNT) data can help to evaluate vulnerability of assets for agriculture, utilities, manufacturing and property portfolio management. The project aims to analyse and communicate climate-related risks to national infrastructure and property investments
- The precise and comprehensive location data will help to facilitate **more informed investment decisions, particularly in sustainability and biodiversity net gain**. The overall ambition of the project is to deliver on ROI for the UK space ecosystem and downstream services, **driving societal impact and environmental protection through the appropriate use and access to EO derived data**.



Actions from SBRI Feasibility Study



Solutions from SBRI Feasibility Study



Proof of concepts

The delivery of **two Proof of Concept (POC) propositions, complete with data models for asset location**, including details user journeys and case reports which guide strategic planning and improved decision-making processes.

Infrastructure analysis

Combined geospatial data with historical EO data (land surface temperature, flooding etc.) to assess climate vulnerability of railway infrastructure. **Derived flooding and heat exposure probability scores to identify vulnerable areas.**

Property investment analysis

Integrated geospatial data with **EO-derived land surface temperature measurements and ownership data** to produce an impact score for heat events affecting properties owned by housing associations in London.

Figure 1: Heat Exposure Probability Score

Figure 2: Impact of heat events to properties owned by two housing associations



Financial Services

Asset location and risk assessment

For agriculture, utilities, manufacturing and property portfolio management



Business benefits from SBRI Feasibility Study



Enhanced Infrastructure and Property Resilience

- **Clear identification of infrastructure vulnerabilities** to climate risks, aiding value-at-risk calculations.
- Identifies properties meeting or failing EPC ratings, highlighting **investment opportunities for improvement**.
- Enables **value-at-risk calculation across the property portfolio**.



Property Investments

- Ability to **assess the impact of weather events on revenue**.
- **Enhanced decision-making on investment** in protective infrastructure, **maximizing impact and returns**.
- Facilitates progress measurement against transition plans using objective data.



EO Data Integration and Corporate Transparency

- **Enhances corporate disclosure and supply chain transparency**.
- **Translates the value of space data into financial services language**, delivering actionable insights.
- **Provides measurable results to meet ESG challenges**, optimizing AI use while reducing bias.

Lessons Learnt from SBRI Feasibility Study

Engage with external stakeholders

Engaging with external stakeholders at both the **C-Suite** and **technical levels** is essential for a comprehensive understanding of sector pain points.

Leveraging external SMEs

Leveraging an **external SME for new market discovery** is critical for accurately translating customer language.

Sample products

When testing propositions, if feasible, **provide sample products to users in a sandbox environment** to gather the most effective feedback.

Next steps and commercialisation plan

Creating insights

Investing in creating **insights** to add depth to OS foundational data.

National repository

Supporting the creation of a national repository for expertly and crowd sourced ground truth data for creating ML training data chips.

Asset identification registry

Creation of a **verified Asset Identification Registry**.

Support standardisation

Support the **standardisation of EO data** and metadata.

Engagement with USB



Ordnance Survey attended the USB Supplier Insight Event in Harwell in October 2024.



Financial Services

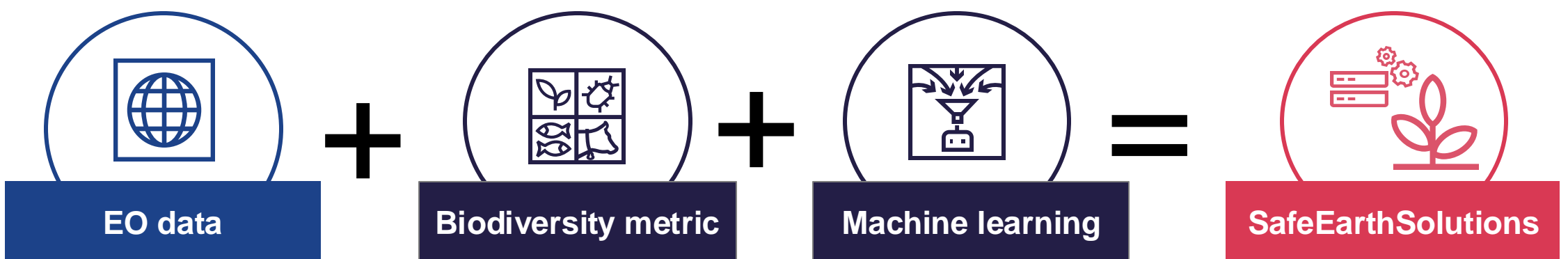
Measuring and monitoring biodiversity

A platform to quantify and verify biodiversity in line with requirements



Situation

- The UK government has introduced a market-based approach for new developments, requiring planning permission to deliver **Biodiversity Net Gain (BNG)** from the beginning of 2024.
- **Developers are required to measure total biodiversity on their site, calculate the loss of biodiversity created by their development, and then to put in place a plan to restore the loss plus add 10% above the original total.** The options include purchasing gains from offsite schemes over a 30-year period.
- SafeEarthSolutions sought to **use earth observation data and create a solution that could quantify, verify and validate biodiversity claims at scale** to increase trust in the market.
- SafeEarthSolutions used **machine learning to develop an algorithm that identifies BNG habitats from drone and satellite imagery.** This algorithm incorporates the **most comprehensive and complex biodiversity metric** to be developed. Quantifying biodiversity from image data using this metric is a unique approach.



Actions from SBRI Feasibility Study

1 Workshops

Organised and facilitated **3 workshops** with **potential customer groups**, gaining clarity on the **use cases** for the prototype.

2 Market opportunities

Better **understood the market opportunities** and **uncertainties**, helping to **connect with parties interested** in using the tool.

3 Market feedback

Early results from the prototype were shown to contacts in the **insurance and green bond space** from which **feedback was received** on market readiness.

Business benefits from SBRI Feasibility Study



Remote monitoring, validation and verification

Clear understanding amongst end-users of the **potential benefit of remote monitoring, validation and verification.**

The scope of the capabilities offered end-users to think about how best to incorporate this **new source of information in their development and deployment of finance products.**



Potential benefit to standardise market

The algorithm has a **potential benefit to standardise** varying expert perspectives regarding the **classification of habitats** that will help in **consistency in the market**, which they are exploring.



To increase trust in UK Biodiversity market

Within the tool, a 'confidence rating' has also been developed, that **shares the accuracy of the outputted data.**

This gives the customer a level of **transparency** about their tool and **keeps accountability** as a product that hopes to increase the trust in the UK biodiversity market.



Financial Services	<h2>Measuring and monitoring biodiversity</h2> <p><i>A platform to quantify and verify biodiversity in line with requirements</i></p>	 SafeEarthSolutions <small>PULSE OF THE PLANET</small>
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Broader business benefits

Other sectors could also benefit from use this solutions for quantifying biodiversity in their organisation:

Financial Services		<p>Received offers of collaboration to develop finance products and further engagement on better iterations of the prototype.</p>
Global Nature Restoration		<p>Beyond the England BNG market uses include supporting the validation and verification of global nature restoration. The product, based on the BNG metric, has gained interest with parties such as the World Bank and Government of India.</p>
Remote Sensing		<p>Attracted interest from the academic remote sensing community for applications in agriculture and developing increasing ranges of remote sensing tech which will have implications for both future potential satellite technology and IoT comms with satellites</p>

Lessons learnt from SBRI Feasibility Study

Clarity of capability limits	<p>Be clear about the limitations of satellite data and recognise that, at times, achieving objectives may require collaborating with clients on issues not directly related to satellite data. For instance, in the finance sector, when supporting loans tied to environmental initiatives, it is essential to demonstrate how these loans will impact net interest margins, compliance terms, and risk metrics.</p>
Biodiversity market limitations	<p>Workshops and one-to-one engagements concluded there remain many shortcomings in the biodiversity market, particularly its long-term efficacy and enforceability. These issues have been highlighted by the Green Finance Institute in their upcoming guidance for the government’s forthcoming review of BNG processes.</p>

Next steps and commercialisation plan

Further develop with key feedback	Commercialisation plan	Follow-on UKSA grant
<p>The developed tool still has significant work to deploy across customers. There was clear interest to further develop the product with key feedback received regarding imperfect results produced.</p>	<p>Implementing a commercialisation plan targeting several customer segments while building internal capability to scale flexibly.</p> <p>This approach is designed to meet both the pace and challenges of emerging opportunities.</p> <p>Markets of interest include Biodiversity Net Gain (BNG) in England, the EU market for nature restoration, and the broader finance for restoration space.</p>	<p>Safe Earth Solutions secured a follow-on grant through the USB programme to support the development of financial products and revenue, with a focus on the wider finance for restoration space.</p>

Engagement with USB

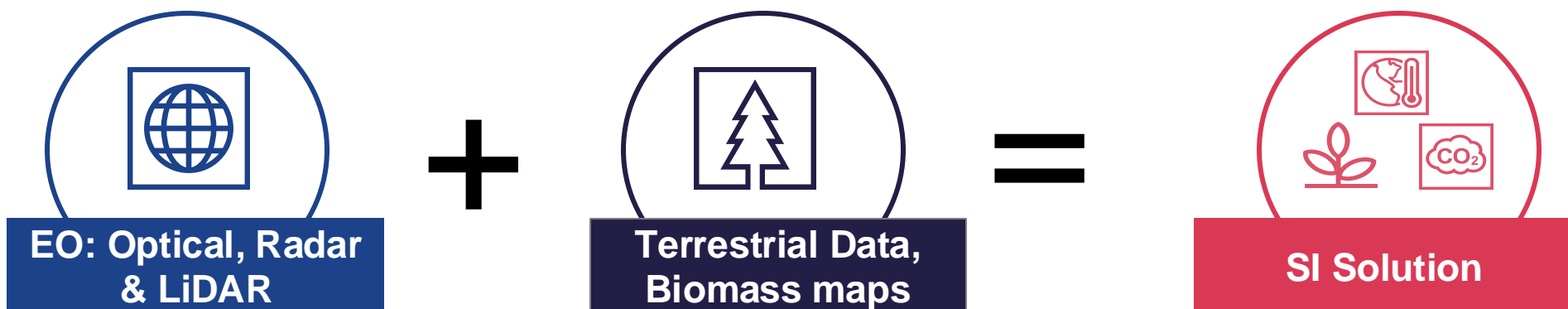
Networking Events	<p>SafeEarthSolutions attended a Networking Event, where they connected with a key contact in the insurance market. This initial meeting has since evolved into a key partnership. SafeEarthSolutions have described this as a “true unlocking space for the finance sector win”</p>
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Financial Services

Nature insights for banks and asset managers
Algorithm to analyse satellite nature data

Situation

- **Increased investment in nature is required to mitigate the dual climate and biodiversity crisis.** However, as nature is an emerging asset class, it lacks data and analytics support compared to more traditional asset classes. This hinders investment in **nature-based solutions (NbS)**, like forest and peatland carbon projects.
- This project aimed to solve this data challenge through an Unlocking Space for Business Feasibility Study for nature investors, **developing the required high quality nature data and insights at scale**, to help **identify investment opportunities, conduct due diligence and meet risk reporting requirements.**
- Insights include historical land use change and carbon potential.



Actions from SBRI Feasibility Study

1 Kick-off

Completed a **short market research study** to better understand **investor's current experiences and challenges** around nature investment, due diligence and asset monitoring.

2 Engagement

Engaged with key **market players** to identify **user requirements and existing market gaps** for products to address the main challenges.

During this phase, Space Intelligence interacted with...

- 6 Financial Institutions**
- 3 Asset Managers**
- 4 Consultancies**
- 1 Insurer**

3 Development

After identifying the main challenges in the nature investment process, **~3 months was spent developing new algorithms** (or refining existing ones) to produce **high-quality, accurate, and timely nature mapping data at scale.**

4 Testing

~1 month testing the **new mapping processes** on both internal and live client projects. Clients were impressed with the **high quality data, insights and reduced delivery timeframe**



Image 1: Satellite image of an area with deforestation of a dense forest for farmland, the lighter green areas are places where deforestation has occurred.

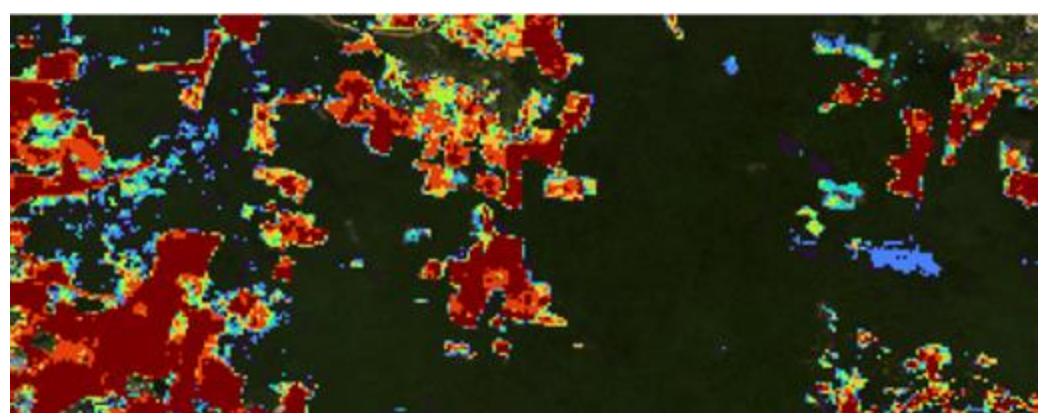


Image 2: Satellite image with an overlay of test results. Colours represent the strength of the signal from their algorithm, red is strongest and blue is weakest



Financial Services

Nature insights for banks and asset managers
Algorithm to analyse satellite nature data



Solutions and business benefits from SBRI Feasibility Study



Enhanced process for nature investment due diligence

The developed solution **comprises novel algorithms that automate**, or significantly enhance, the **efficiency of producing and scaling data** to support **nature investment due diligence**.



Enhanced insights to help de-risk investments in nature

These datasets will feed into insights reports, **providing essential nature data** (e.g., historical deforestation, present-day land cover, and biomass) and insights (e.g., project site suitability) to help de-risk investments.



Organisations can invest in nature-based solutions confidently and at scale

This will **enable NbS investors to proceed with confidence** and at scale, **accelerating nature investments** necessary to meet global climate and biodiversity targets, as well as individual net-zero goals.

Other sectors could also benefit from the timely production of **high quality, accurate nature mapping data**:

Mining Sector



Use of data and derived insights by **mining sectors** to identify, plan and monitor reclamation areas **post-mining**.

Construction Sector



Use of data by **construction sector** to ensure new developments meet sustainability requirements (e.g., zero deforestation, biodiversity net gain).

Lessons learnt from SBRI Feasibility Study

Market research

A key part of the project was the **initial market research study and gap analysis**, which allowed them to **target their product development to the exact specifications required** by their potential end-users.

Take time to understand

An important part of the process was **understanding market requirements and engaging with end-users early in the development process**, especially when using unfamiliar datasets or technology for the targeted sector.

Next steps and commercialisation plan

Marketing strategy & relevant party engagement

Immediate next steps involve **developing a comprehensive marketing strategy and commercial outreach campaign** to inform existing and potential clients about their new NbS insights product offering.

In the coming months, to continue to **engage with relevant stakeholders at networking events and major industry conferences**, such as CE-EM's Corporate Investments into Forestry & Biodiversity Summit and Carbon Forward London.

Continuous improvement

On the technical side, Space Intelligence will continue to **enhance mapping algorithms** to increase efficiency and support new product development.

Engagement with USB

Networking Events

Space Intelligence attended a Networking Event for the FS sector in April 2024. Space Intelligence also spoke on a panel with other USB programme members to discuss the project and the wider use of satellite data to support the Financial Services sector.





Financial Services

Due diligence of vegetated natural capital assets



A remote sensing-based tool for due diligence of prospective investments

Situation




- There is an **enormous funding requirement to support biodiverse nature restoration** and carbon removal projects, and for the first time these projects are ready for institutional investment. However, whilst there are **billions of dollars being raised by asset managers to invest into natural capital projects**, these asset managers **lack the technical expertise to conduct standardised due diligence** across multiple projects or multiple geographies.
- The solution developed by Treeconomy was designed to **support asset managers** investing into this emerging asset class **by building a remote sensing-based tool for due diligence of prospective investments**.
- Treeconomy developed **tools and assessments using remote sensing satellite data to provide rapid results**, including combining both remotely sensed and ground data to develop a **predictive carbon removal impact curve**.



Actions from SBRI Feasibility Study

<p>1 Testing and Feedback Collection</p>	<p>2 Defining Use Cases</p>	<p>3 Development</p>
<p>Treeconomy tested the solution with a number of beta-tester asset manager users through the SBRI programme, gaining useful feedback of the required tooling and the wider due diligence process.</p>	<p>The feedback helped Treeconomy to define the start and end use for the tool in its first phase. This step ensured that they were efficient with their development and build time.</p>	<p>The due diligence tool was then developed and build for asset managers seeking to invest into UK afforestation projects. The tool was constrained to a certain project type and geography based on user feedback and immediate use-cases.</p>

Solution and Business benefits from SBRI Feasibility Study

 <p>Speeds up rate of finance deployment</p>	 <p>Standardised Due Diligence across geographies</p>	 <p>Organisations can invest in natural capital confidently and at scale</p>
<p>By removing the due diligence blocker, the developed due diligence tool accelerates the rate of finance being deployed into natural capital projects that support nature restoration and carbon removal.</p>	<p>Asset managers can now conduct consistent and reliable due diligence in different geographies using the tool, ensuring a uniform approach across various investments.</p>	<p>This will enable asset managers to proceed with confidence and at scale, necessary to meet global climate targets and support biodiverse nature restoration and carbon removal projects.</p>



Financial Services

Due diligence of vegetated natural capital assets



A remote sensing-based tool for due diligence of prospective investments

Lessons learnt from SBRI Feasibility Study

Focus early and consistently on customer use of tools

The most difficult and uncertain aspects of the project were not building the technical tool itself but defining the customer engagement process and target market with them. A key part of the project was **engaging with customers from the beginning**, which ensured the tool met their needs and expectations.

Constraining the tool's initial use case can be advantageous

By **deliberately limiting the tool to specific project types and geographies** based on user feedback, the team could deliver a more **focused and effective solution**. This approach helped create a tool that provided immediate value and met the needs of the users.

Next steps and commercialisation plan

Rollout to emerging portfolios

The developed tool still has **significant work to deploy across customers**. There was clear interest to further develop the product with key feedback received regarding imperfect results produced.

Expand the tool to support additional project types

Enhance the tool's capabilities to conduct due diligence for a **wider variety of natural capital investments**, thereby increasing its utility for investors.

Extend the tool's geographical reach

Build upon the recent upgrade to support jurisdictions beyond the UK, **making the tool applicable to a global market** and enabling international investments in nature restoration projects

Engagement with USB

Networking Events

Exploration Workshops

Learning & Development

Supplier Insight Event

Treeconomy engaged with USB through the in-person networking events.

"The networking events were very valuable for the project."



Map of SBRI Funded Applicants



Organisation	Organisation based in
Assimila	Reading
BolgiaTen	Liverpool
Craft Prospect	Glasgow
EOLAS	Glasgow
Geospatial Ventures (GVL)	Nottingham
GMV	Nottingham
National Oceanography Centre (NOC)	Southampton
OneBigCircle (OBC)	Bristol
Ordnance Survey (OS)	Southampton
Space Intelligence	Edinburgh
SafeEarthSolutions	Bristol
Treeconomy	London



Figure 1: A map of the United Kingdom highlighting the head office location of SBRI recipient organisations.



The UK Space Agency (UKSA) was founded in 2010, and supports a thriving space sector in the UK, which currently generates an annual income of £17.5 billion and employs 48,800 people across the country.

We are delivering UK Government's National Space Strategy through three key pillars:

- **Championing the power of space**, encouraging other sectors to use space to deliver better services, tackle the climate emergency and support a more sustainable future.
- **Catalysing investment** by deploying funding and resources to multiply the value of commercial contracts and private capital to maximise the UK space sector long-term growth.
- **Delivering missions and capabilities** that use space science, technology and applications to meet national needs and advance our understanding of the Universe.

Contact us to find out more:

unlockingspaceforbusiness@ukspaceagency.gov.uk

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