

// **Company Case Study**

Global Surface Intelligence

Utilising satellite data to provide in-depth business intelligence and AI support

Enabling organisations to make better informed decisions based on up-to-date data

January 2019

We work with
Innovate UK



Scottish
Centre of Excellence in Satellite Applications
Ionad de Sàr-mhathas ann an Goireasan Saideal na h-Alba

CATAPULT
Satellite Applications

In partnership with: the Scottish Centre of Excellence in Satellite Applications (SoXSA), Scottish Space Incubator (Tontine), Catapult Business Strategy team (through Seraphim Space Camp).

WHO ARE GLOBAL SURFACE INTELLIGENCE?

Global Surface Intelligence (GSI) provides business intelligence and artificial intelligence (AI) products and services based on satellite data. Decision-makers benefit from rapid discovery and new sources of information that relate to the performance and condition of natural assets, or their impact on client assets such as infrastructure.

GSI's USP is helping organisations to make better-informed decisions by working with affordable up-to-date information. Since its period within the Scottish Space Incubator at Tontine, managed by SoXSA, GSI has grown to a team of 12 (and is still recruiting), has raised over £800,000 in new equity investment and has expanded into new industry sectors.

THE CHALLENGE

In any single place, land use and/or cover can change frequently. Satellite data enables organisations to analyse and monitor these changes. This can be expensive however, leading to a reliance on old or inaccurate data that doesn't reflect the current situation. GSI identified a way to transform raw satellite data into detailed, high value business intelligence by applying patented artificial intelligence (AI) and machine learning techniques to analyse combinations of satellite, drone and ground survey data.

Founded in 2012, the company's growth took off in 2017 following its year-long placement at the new Scottish Space Incubator at Tontine, managed by SoXSA and funded by the UK Space Agency. This gave GSI access to focussed business and technical support, and located it within the vibrant Scottish space sector community. SoXSA also advised it on potential additional datasets, helped highlight new markets, such as the need for near real-time data on trees surrounding wind farms, and generated introductions to potential customers.

GSI was selected by SoXSA as one of its 'Ones2Watch' at Data.Space 2018. During 2018, GSI won a place on mission #1 for Seraphim Space Camp, and also completed a Business Sprint with the Catapult.

SUCCESSES AND ACHIEVEMENTS

GSI's time within the Scottish Space Incubator (Tontine) improved its prominence within the Scottish space sector community and led to collaborations with other space companies, notably Craft Prospect. Overall, non-space sector companies within Tontine saw an average increase in turnover of £126k pa and the addition of two full-time staff members, while space sector companies saw an average increase of £274k in turnover pa, and four full-time employees.

GSI's growth led to its graduation from Tontine, moving back to its original home in Edinburgh to enable access to developments around AI and big data.

One notable client success resulted from SoXSA identifying that GSI's technology could solve a challenge faced by a Scottish energy company relating to trees surrounding a wind farm. Despite not having worked in the field before, GSI successfully completed a pilot study, leading to a commercial relationship.

GSI's expertise in forestry was underlined in 2017 when it won a competition run by the Government of Saskatchewan in Canada to deliver an efficient and accurate forest inventory across 67,000 hectares.

WIDER BENEFITS TO SOCIETY

GSI's technology applies AI and machine learning to big data to produce insight into natural assets and land use. Reliable, up-to-date data on land use and cover, including forestry and agriculture, enables better stewardship and use of the world's resources.

For forestry applications for example, GSI combines optical data from Sentinel satellites with radar, LiDAR and ground survey data, training its platform to recognise aspects such as tree height, fire and disease. Organisations can then use this to create and monitor forest inventories, and detect changes, illegal or otherwise.

More generally, GSI's data can be used to identify changes in land use, such as new building projects, and help with crop yield forecasting and analysis. In the energy sector it can support infrastructure planning – for example to optimise wind turbine output, boosting renewable energy supplies.

“Our incubation period at Tontine marked a major change for our company, and a large part of that was because the Scottish Space Incubator was managed by an organisation that truly understood the sector we operated in. SoXSA's continuing support and pro-active approach has led us into new markets and introduced us to new clients, and we value that help enormously.”

Gavin Tweedie
CEO, Global Surface Intelligence
www.surfaceintelligence.com

“Satellite data provides the raw information that can solve many challenges, but it needs the correct combination of technical ability, creativity and business acumen to make a business out of that. GSI has a unique technology offering and it has been very rewarding to be part of its journey as it applies that to new industries – and grows as a result.”

Dr Steven Owens
Knowledge Exchange Fellow,
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