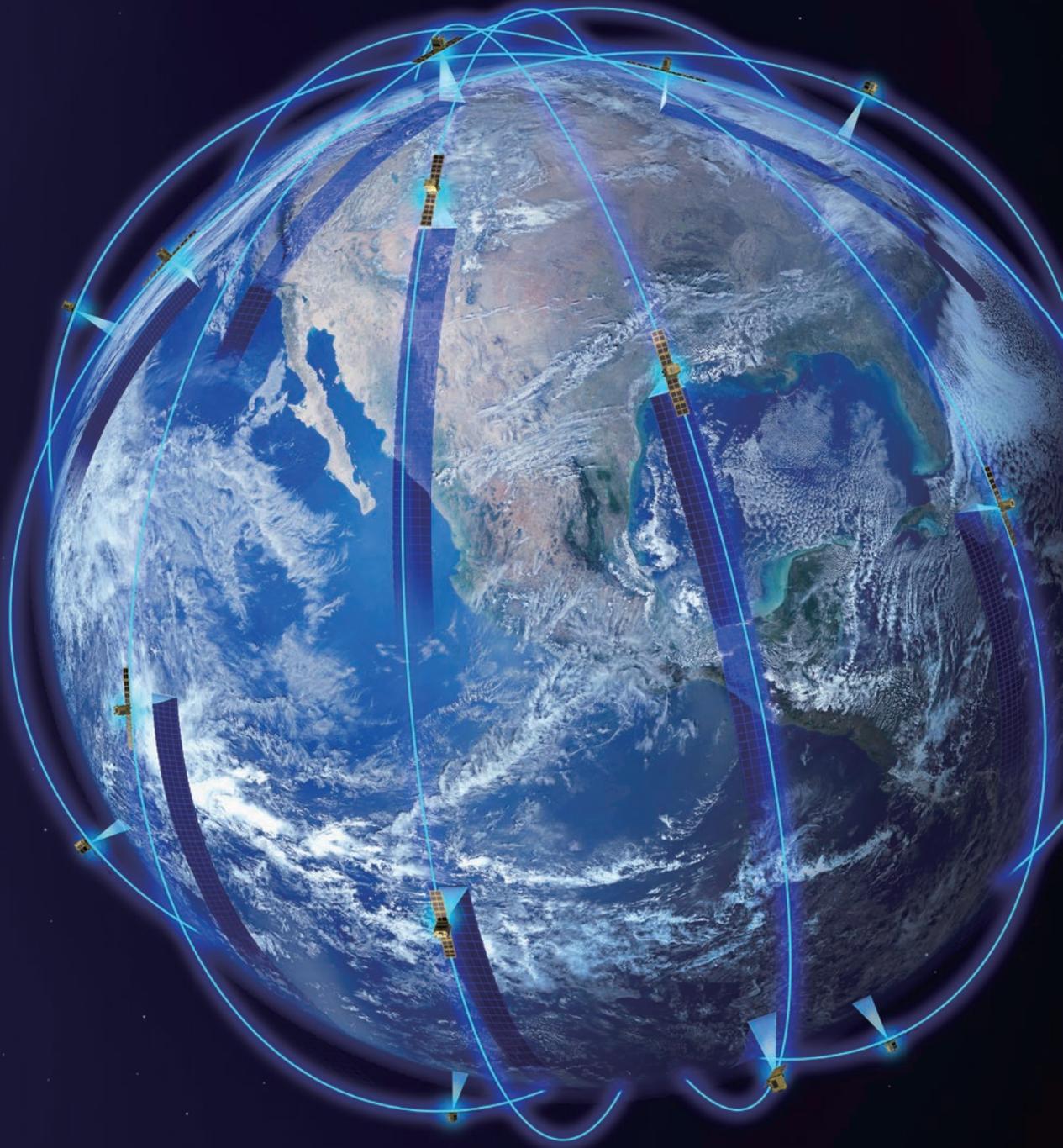


CORPORATE OVERVIEW



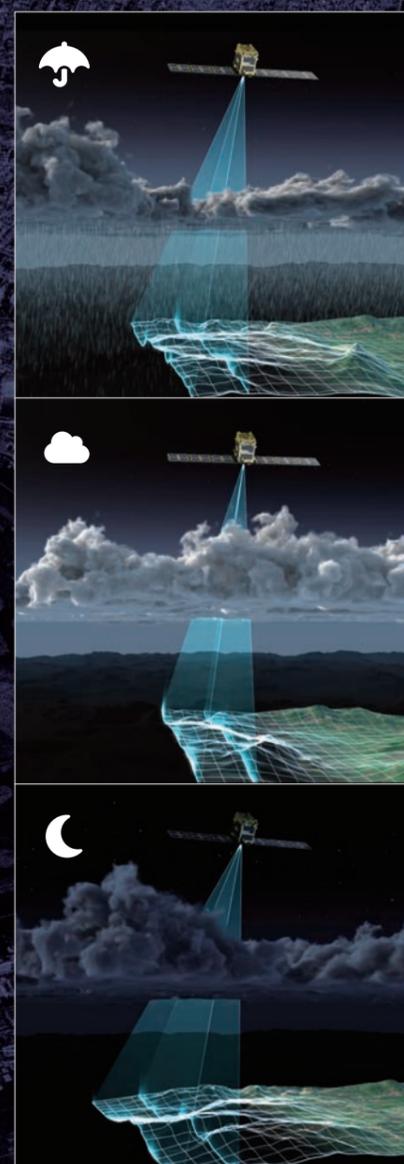
SAR Satellite Data Creation



Synspective's small synthetic aperture radar (SAR) satellite technology derives from the Japanese government's innovative R&D program, ImPACT. SAR satellites measure microwave radar responses to create imaging of both land and sea. Microwave signals can penetrate through clouds, allowing SAR satellites to have an unobstructed view of the Earth's surface.

On December 15, 2020, Synspective launched its first demonstration satellite from Rocket Lab's Launch Complex 1 on New Zealand's Mahia Peninsula. The company acquired the first images on February 8, 2021. Synspective has since launched two more missions to low Earth orbit, bringing a total of three SAR satellites to its growing constellation. The surface resolution is 1-3m and the observation width is 10-30km. This makes it possible to observe an area of 1,000km² or more (approximately the area of Tokyo's 23 special wards) at a time and acquire single-polarization (VV) data.

By the late 2020s, Synspective will build a constellation of 30 satellites and an analytics platform that can monitor changes at any location on Earth in near real-time. With this integrated system, we aim to support customers to better understand our environment and changing planet, develop resilient infrastructure, and optimize sustainable use of natural resources and energy.



StriX Specification

Synspective's small SAR satellite StriX boasts a larger swath, lower noise, and a wider area of observation than other satellites in its class. Operating at a nominal altitude of 560km or higher, StriX follows a sun-synchronous orbit typical of other Earth observation satellites and can make daily visits to the same location.

Visit frequency will increase with constellation growth. StriX satellites emit a 9.65GHz (X-band) frequency microwave signal directed at a target on Earth. The amount of signal reflected (backscatter) provides a full image of the terrain and structural properties at the target location.

StriX SAR Data Gallery



Orbit Parameter

Orbit type	sun-synchronous orbit
Nominal altitude	561km
Orbit inclination angle	97.7 degree
Revisit period	1 day
Local Time at Ascending Node (LTAN)	21:00

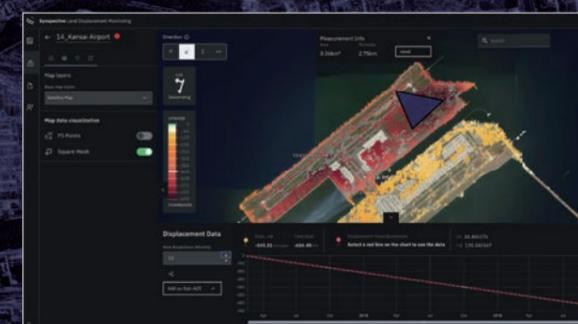
Sensor Specification

Center frequency	X-band
Polarization	VV
Off-nadir angle	15-45 degrees

Data Analysis and Insights with Data Science and Machine Learning

Synspective provides various Software as a Service (SaaS) solutions for customers with satellite data. The combination of various datasets (IoT data, PoS data, GPS, thermal sensors) with SAR imagery information can accelerate and validate important decision-making processes.

Land Displacement Monitoring (LDM)

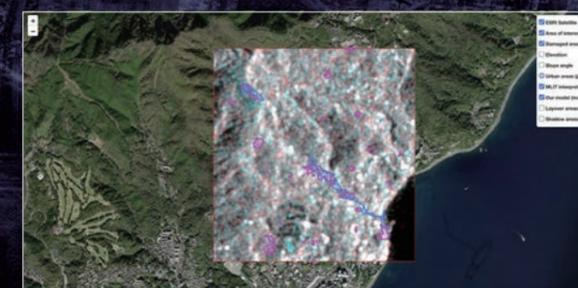


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Analysis of ground risk in mm with SAR satellites

Infrastructure risks to geohazards, such as landslides and subsidence, are immense and require assessment, monitoring, and risk reduction to ensure safety and longevity. Synspective's LDM Solution applies InSAR analysis technology with regular satellite monitoring to detect ground deformation in millimeters over a wide area and assess critical infrastructure security and resilience.

Disaster Damage Assessment (DDA)



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Change detection from SAR satellite data analysis

When a natural disaster strikes, emergency and disaster response officials need to quickly gather information to assess and analyze the situation. SAR satellites provide all-weather capabilities both day and night to map and monitor large areas affected by natural disasters from a remote location.



Synspective

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Founder & CEO	Dr. Motoyuki Arai
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Business	<ul style="list-style-type: none">· SAR imagery data sales· Solution service using satellite data· Development and operation of small SAR satellites
Established	February 22, 2018
Number of employees	185 members / 28 nationalities (as of February 2023)
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