

A satellite view of Earth from space, showing a curved horizon and a dark, starry background. The Earth's surface is covered in a dense layer of white clouds, with some darker areas visible. The overall color palette is dominated by deep blues and blacks, with the white of the clouds providing a stark contrast.

ICEYE

Accurate, near real-time Earth monitoring with SAR data

Monitor any location with SAR data and get unprecedented access to accurate images of any location on Earth – every few hours, day and night, in any weather.

Q2 2024

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Executive summary – welcome to a new era in SAR

Spaceborne Earth observation has been well established for decades, with synthetic aperture radar (SAR) satellites being the gold standard due to their ability to collect images from areas of interest day and night and in any weather. Traditional SAR satellites are very large and carry very large antennas with limited revisit frequency and flexibility.

Only ICEYE's small and agile SAR satellites are able to revisit the same location on Earth daily and even sub-daily, enabling a completely new level of change detection. ICEYE's large commercial constellation of SAR satellites now makes it possible for governments and commercial organizations to acquire data on any location on Earth – any time they need it, with very high resolution, high frequency revisits, and at an affordable price. A new era in SAR is being pioneered by ICEYE.

Game-changing technology

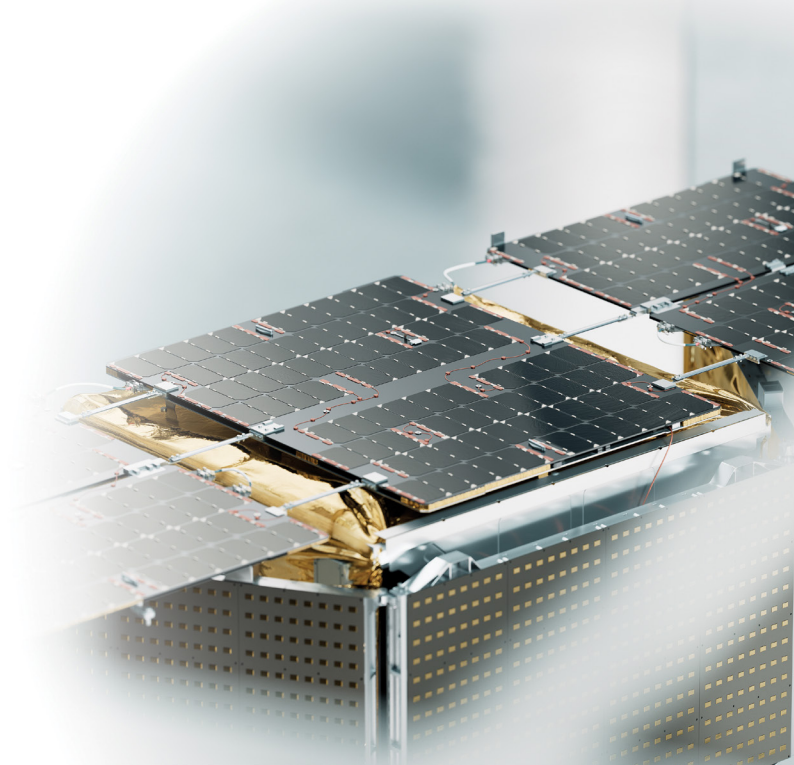
Our unique antenna is designed to enable an unprecedented range of operational approaches. Our Spot, Strip, Scan and Dwell modes allow us to move quickly and easily between scanning areas up to 84,000 km² in area in lower resolution and zooming into areas at much higher resolution.

Operationally proven

With the world's largest SAR constellation, ICEYE delivers unlimited global access and the highest frequency revisits on the market – measured in hours instead of days. We've launched over 30 satellites since 2018 with 20+ more planned for 2024 and beyond, enabling even faster and more frequent access and allowing SAR to be used in ways that have never been possible.

The only ready-made spacecraft solution

In addition to delivering data, we are also the only organization in the world to offer governments and organizations the chance to buy high-precision SAR satellites straight from our own production line. ICEYE is the only organization in the world today able to deliver this kind of groundbreaking and proven capability.





“Your turnaround
is fantastic.”

National Geospatial-Intelligence Agency

Regarding ICEYE’s response to historic flooding in the U.S.

“Your images are
works of art!”

United States Navy

Referencing ICEYE SAR collections in support of a
military demonstration in 2021.

Proven satellite launches and more to come

- 30+ satellites successfully launched since 2018
- 20+ more to be launched in 2024 and beyond
- Future developments planned for 2024 and beyond



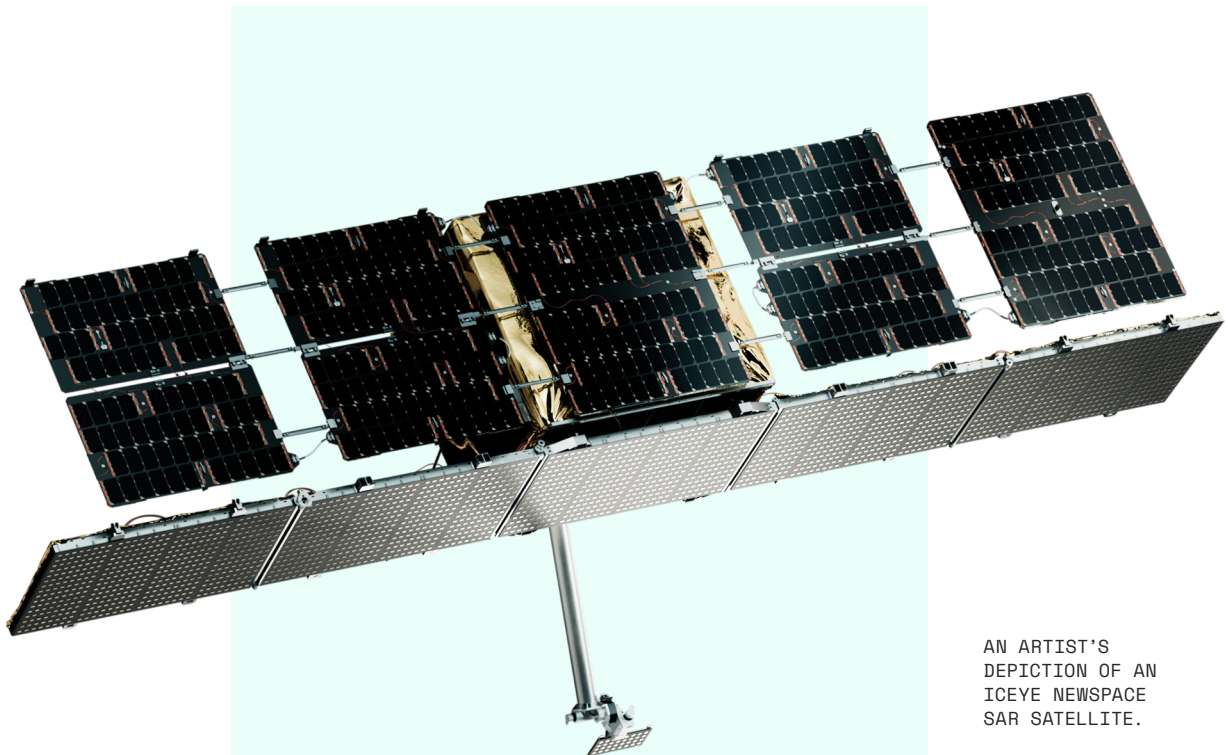
A revolutionary SAR satellite design

ICEYE satellites are designed to deliver high-performance persistent monitoring capabilities at a significantly lower weight and cost than traditional SAR satellites. With the unique combination of a miniaturized SAR sensor payload integrated onto a high-performance lightweight platform, ICEYE satellites deliver a level of performance that has never been possible before.

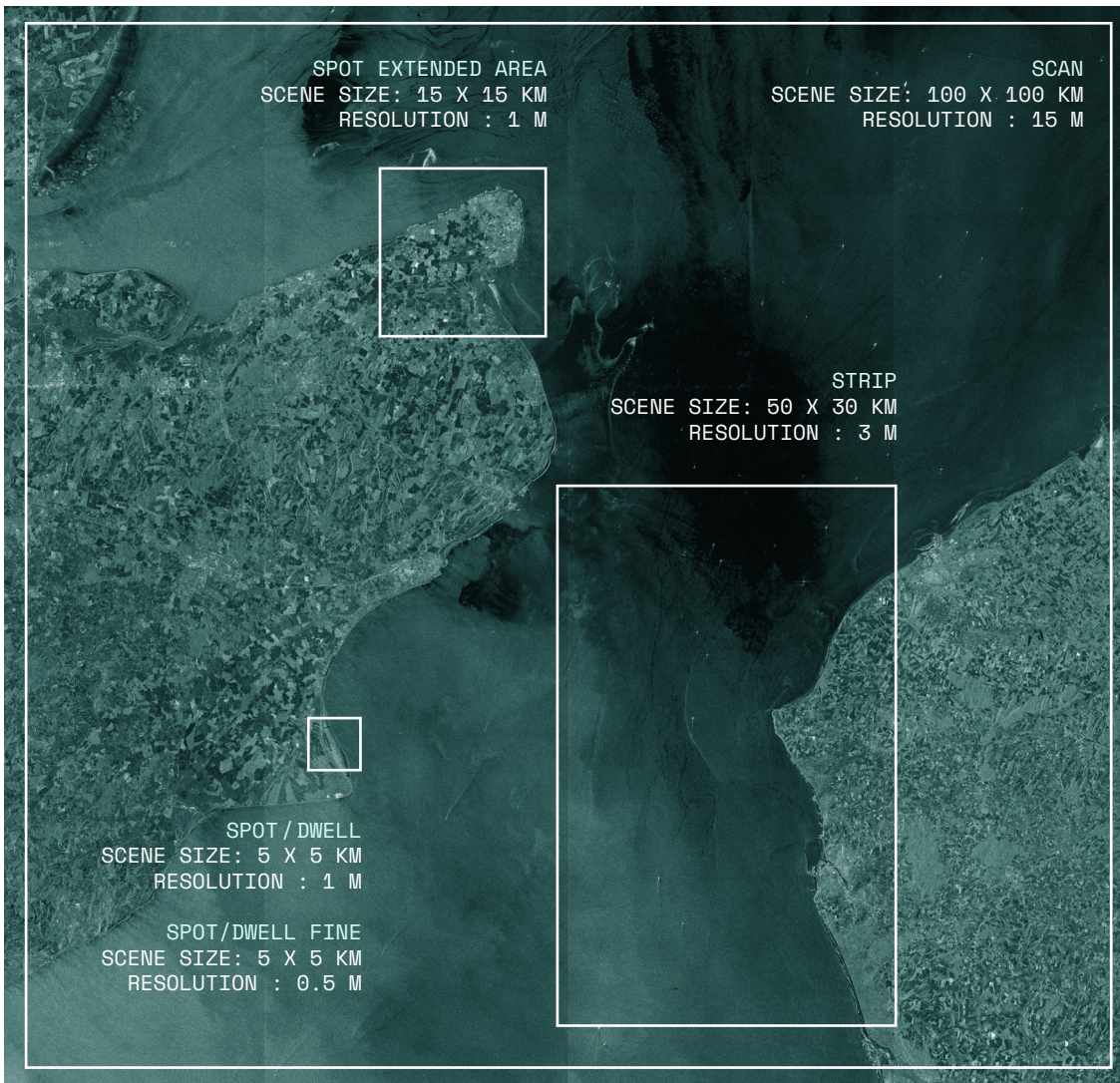
The design enables long imaging dwell times at extremely high resolution and the ability to flexibly maneuver the antenna and scan the

radar beam across wide areas. This enables ICEYE to deliver multiple imaging modes that enable the broadest possible range of operational applications.

The engineering breakthroughs we've made have significantly reduced the weight, manufacturing time and cost of our satellites compared to the traditional approach, enabling governments, organizations and commercial companies to use SAR data in ways that have been impossible until now.



AN ARTIST'S
DEPICTION OF AN
ICEYE NEWSPACE
SAR SATELLITE.



ICEYE SAR imaging modes:

Up to 50 cm Resolution.

Up to 84,000 km² Scene size.

ICEYE's unique Antenna is an electronically-steered phased array that can be controlled to enable a range of imaging modes for demanding operational needs.

Location:
English Channel

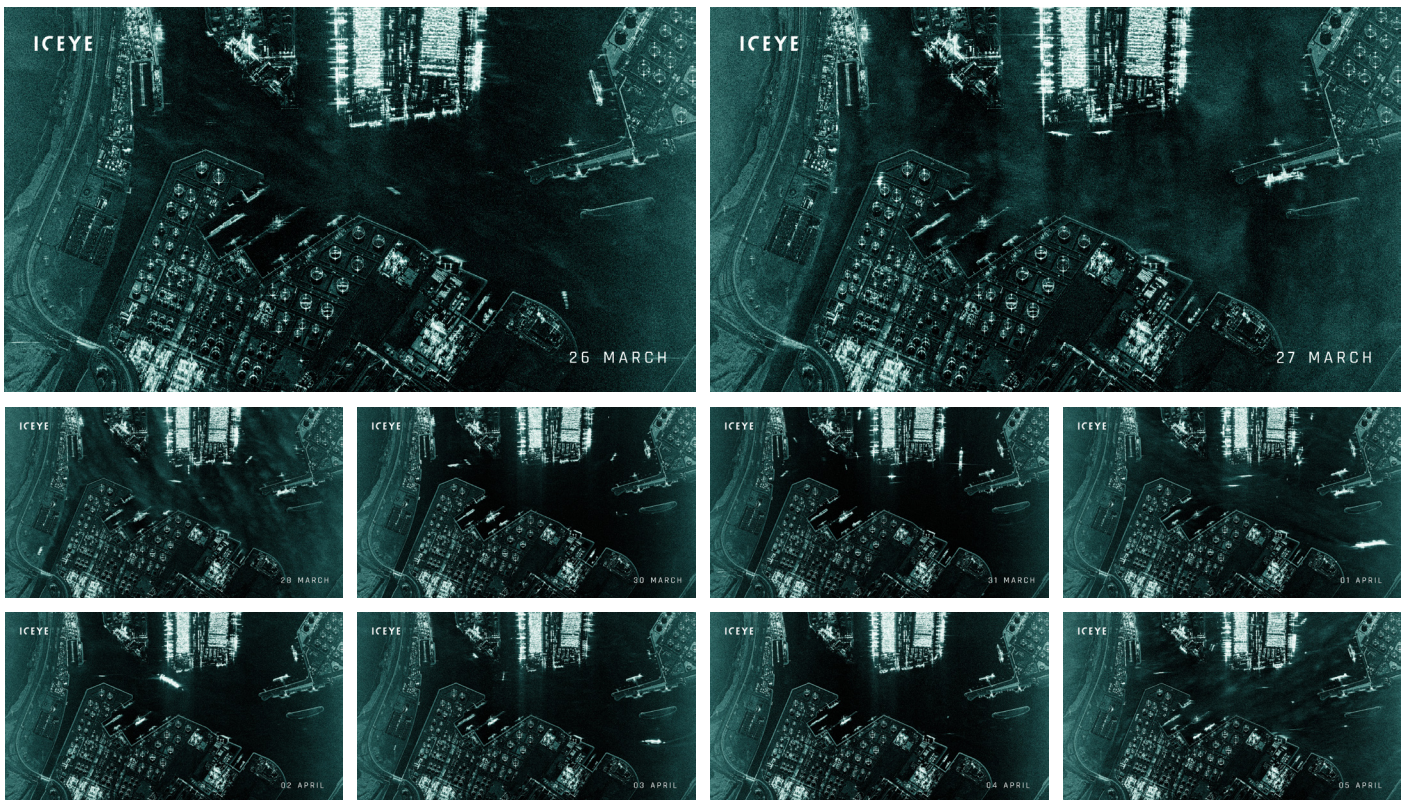
Imaging mode	Strip	Spot	Spot Fine	Dwell	Dwell Fine	SLEA	Scan
Nominal swath width x length [km]	30 x 50	5 x 5		5 x 5		15 x 15	100 x 100
Slant resolution(azimuth x range) [m]	3 x 0.5-2.5	0.25 x 0.5	0.1 x 0.25	0.05 x 0.5	0.05 x 0.25	0.5 x 0.5	N/A
Ground resolution [m]	3	1	0.5	1	0.5	1	15
Nominal collection duration [sec]	10	10	15	25	25	10	15
Azimuth looks	1 to 2	4	5	20	10	2	1
Maximum image length [km]	840	5		5	5	15	840

More satellites, more coverage

ICEYE runs the largest operational SAR satellite constellation in the world with the largest number of satellites. This enables capabilities like Daily Coherent Ground Track Repeat (GTR) and Persistent Monitoring, a capability that hasn't been possible before.

Very frequent revisit

For the first time, it is now possible to persistently monitor an area of interest (AOI) frequently. This is only possible because ICEYE's constellation has a high enough number of satellites in the precise orbits needed to achieve this world-first.



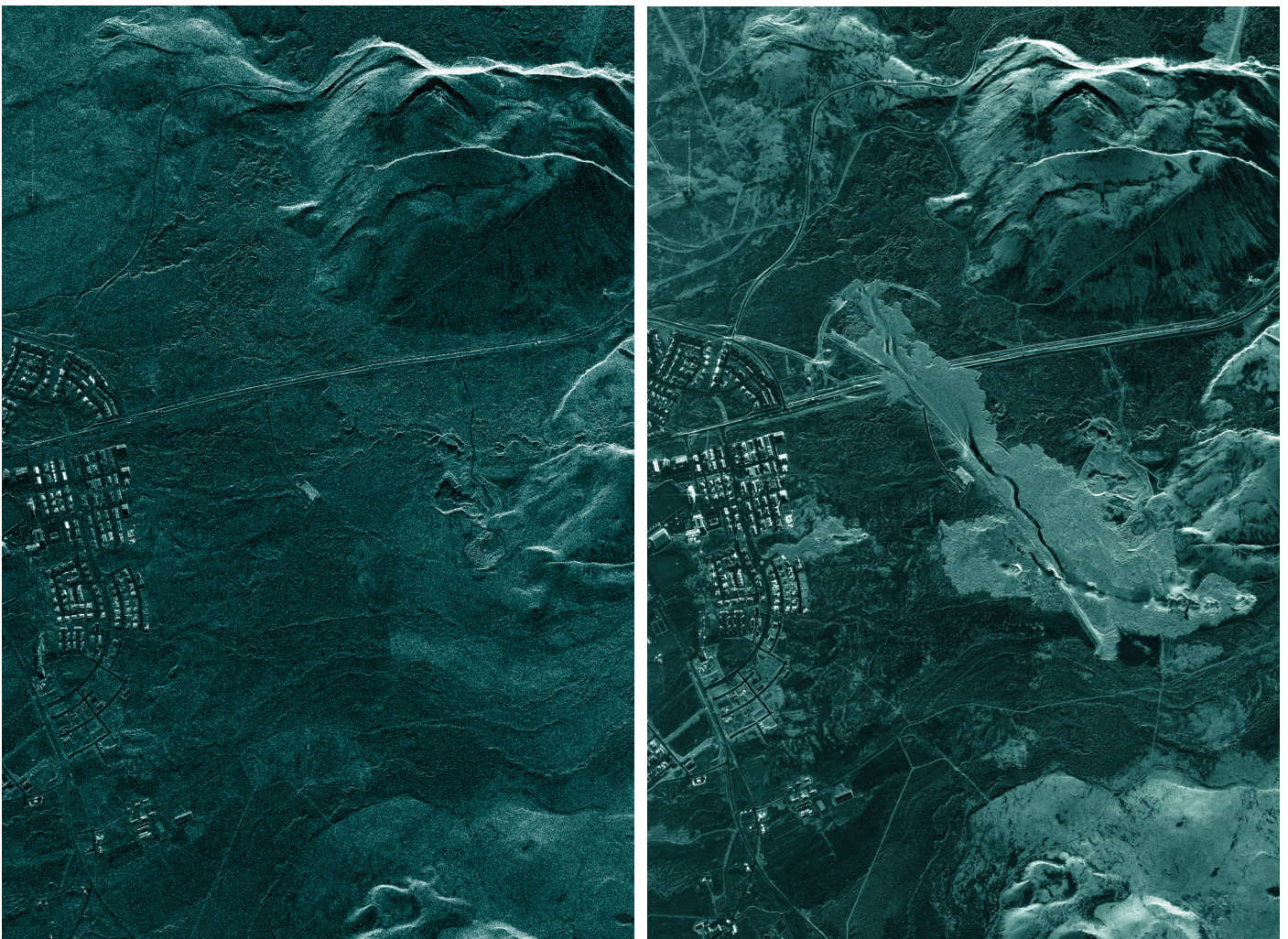
PORT OF ROTTERDAM, NETHERLANDS

SHOWS 10 OF A 58 DAY COHERENT IMAGE STACK
USING SPOT IMAGING MODE @ 1 M RESOLUTION,
TAKEN BETWEEN 26-03-2021 AND 05-04-2021.

More satellites, more coverage

Very precise change detection

Utilizing change detection techniques, it's possible to identify highly accurate ground change every 24 hours, including things like movement of a vehicle along a track or lava flow during a volcano eruption. Each image in a stack has the exact same geometry, radiance and phase, which enables millimeter-level change detection.



GRINDAVIK VOLCANO ERUPTION, ICELAND

A COMPARISON BETWEEN TWO ICEYE SAR SATELLITE IMAGES OF AN ERUPTING VOLCANO ON THE REYKJANES PENINSULA IN ICELAND, ACQUIRED ON DECEMBER 19, 2023(LEFT) AND JANUARY 14, 2024(RIGHT), USING SPOT EXTENDED AREA MODE (LEFT) & DWELL MODE (RIGHT). SEE HOW THE LANDSCAPE NEAR THE ERUPTING VOLCANO HAS CHANGED, DUE TO THE SPREAD OF LAVA.

More satellites, more coverage

Very high resolution

ICEYE's high-performance SAR satellites are capable of imaging 50 cm resolution in Spot Fine mode, which allows you to detect and classify objects like vehicles and vessels. And Strip mode at 3 m resolution and Scan mode at 15 m resolution are also available if greater image area is required at high resolution.

Ever Given container ship,
Suez Canal, Egypt



More satellites, more coverage

Task quickly with ICEYE APIs

Get immediate access to the ICEYE SAR constellation with ICEYE SAR Data APIs. The APIs provide a smooth workflow by automating tasking, status information, and delivery. And with no manual intervention needed, you can task faster with lower latency and gain quicker insights.



Workflow

- Automated tasking, status, delivery
- Machine-to-machine connection
- Powerful, easy-to-understand workflow
- 15 min +/- feasibility response*
- Selection of various tasking parameters

*subject to polling intervals



Latency

- Tasking minimum 8 hours before acquisition
- Automated AWS S3 delivery
- Immediate access to task status/ task cancellation



Catalog

- Immediate access to 60,000 ICEYE SAR images
- Search and purchase via standard STAC parameter search

More satellites, more coverage

Possible applications using SAR data

Defence
and security

Natural
catastrophe
assessments

Dark vessel
detection

Deforestation

Oil spill
tracking

and
countless other
applications

Changi Airport, Singapore

IMAGE MODE: SPOT EXTENDED AREA @ 1 M RESOLUTION,
TAKEN ON 24-11-2021 AT 19:19 UTC.

ICEYE's Spot Extended Area is the world's largest high-resolution SAR satellite image, a significant increase in area coverage with the same ground resolution.

Typical data solution

Data for your operational needs

ICEYE's core mission is to make Earth observation with SAR imagery easy and more accessible. We are happy to tailor a package to your operational needs, taking into account the location and size of your AOIs, the frequency and quantity of images you require, image modes, and resolution.

A data order commitment

This gives you the flexibility to request imagery as you need it, choosing various locations, changing resolutions or modes, and drawing images from an agreed repository. The value of this commitment can be sized as you wish, with discounts for larger commitments.

Persistent monitoring of any AOI

If you need to increase your situational awareness by persistently monitoring a specific AOI or multiple AOIs, day or night and in any weather, we can offer a bespoke quotation for this service.

Archive imagery

ICEYE has over 60,000 archive images covering locations around the world. The technical characteristics and global coverage of ICEYE products provide extremely valuable inputs for a variety of studies and application developments. The archive data used alongside new imagery is well-suited for things like change detection on the ground, the assessment of damages caused by natural catastrophes, and the monitoring of infrastructure integrity.



Why ICEYE?

A typical satellite solution would include:

ICEYE has completely revolutionized the use of SAR Earth observation for governments and organizations, offering unprecedented access to critical and timely information on changes and activities. SAR provides highly accurate, reliable, and timely data for a variety of applications on land and at sea, day or night, and in any weather.

The world's largest SAR constellation

ICEYE operates and will continue to maintain the world's largest operational SAR satellite constellation, giving you unrivalled global access and revisit frequency measured in hours, not days or weeks. No other NewSpace SAR provider has launched as many satellites, with 30+ more planned for 2023 and beyond.

Groundbreaking technology

ICEYE's unique ability to make rapid technological advances designed to meet real operational needs has led to the creation of world-first capabilities like our Scan, Strip, Spot and Dwell modes, which provide images from 0.50 m resolution to 100 km in width and up to 84,000 km² in area. This flexibility is not possible with other SAR NewSpace satellite designs.

Operationally proven

Over 30 ICEYE satellites have been launched since 2018, and we have operated our commercial constellation since December 2018. We are the only NewSpace SAR company with such a vast level of proven experience. And we are the only organization in the world with the proven ability to supply new-era Earth observation satellites from our own production line.

If you are interested in procuring ICEYE SAR imagery, please get in contact and we would be happy to provide a solution tailored to meet your needs.

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