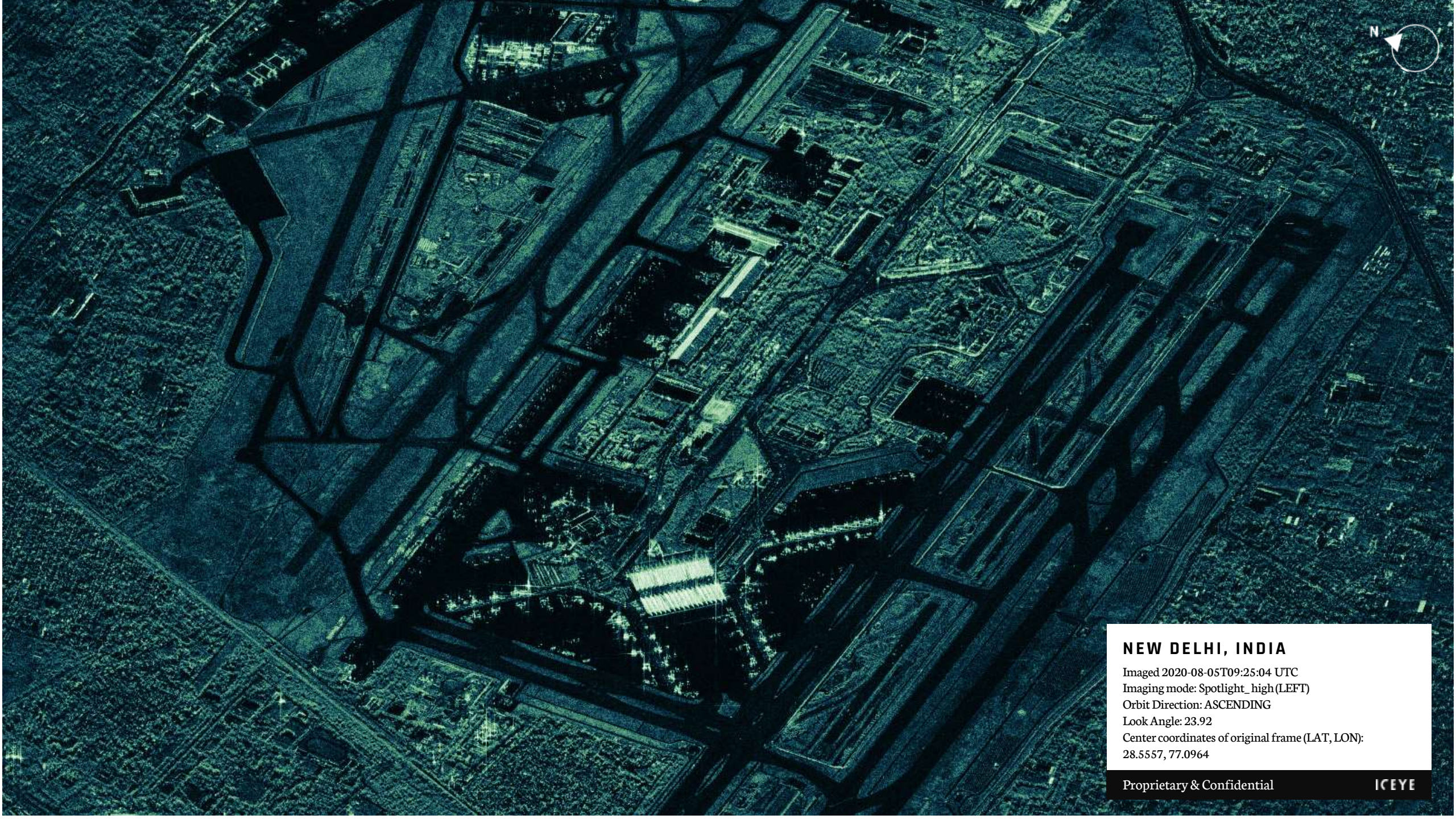




# ICEYE

## **BETTER DECISION MAKING** WITH ICEYE'S PERSISTENT MONITORING

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## NEW DELHI, INDIA

Imaged 2020-08-05T09:25:04 UTC  
Imaging mode: Spotlight\_high (LEFT)  
Orbit Direction: ASCENDING  
Look Angle: 23.92  
Center coordinates of original frame (LAT, LON):  
28.5557, 77.0964

Proprietary & Confidential

ICEYE



RADAR IMAGING

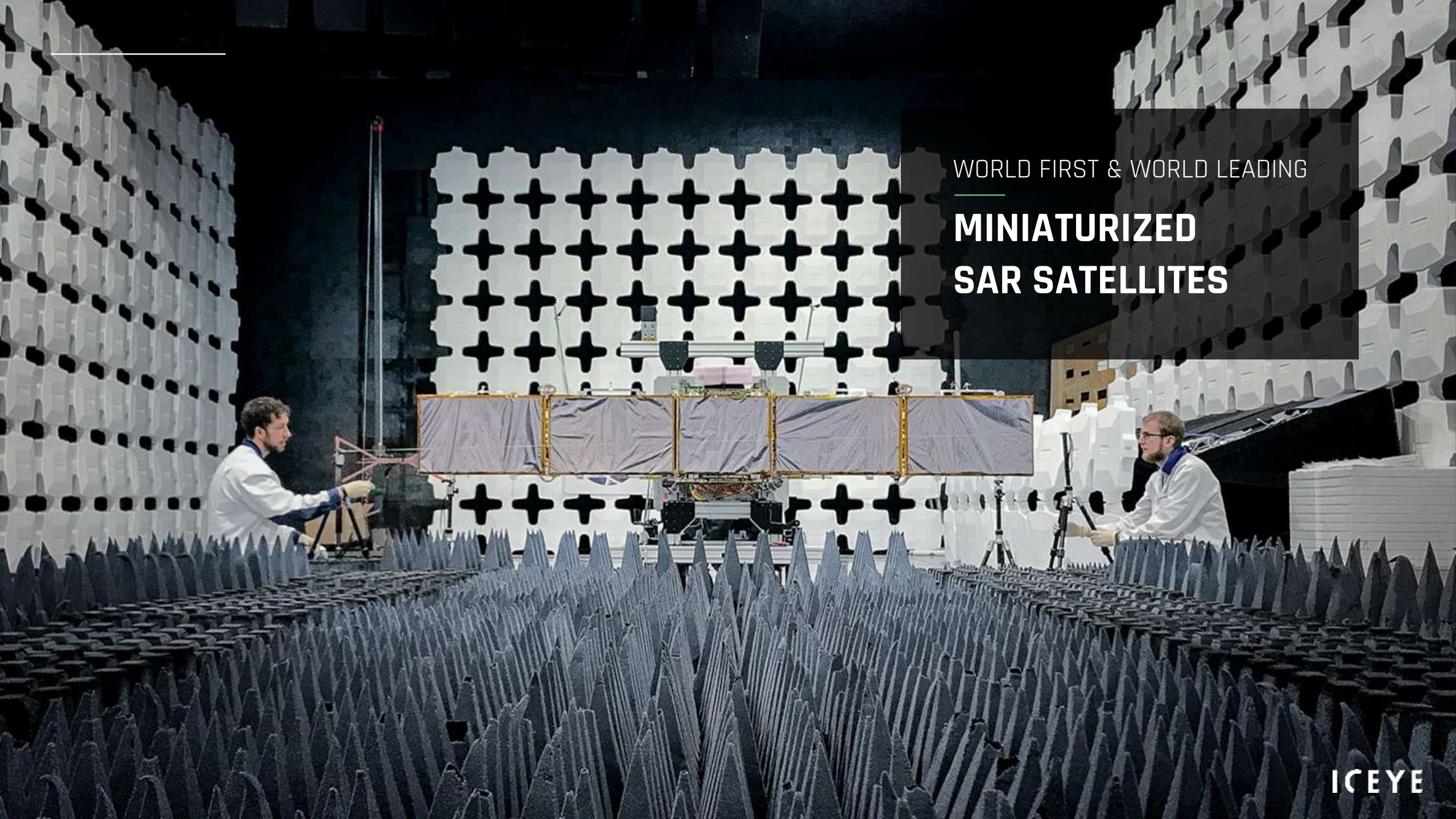
**THROUGH CLOUDS  
THROUGH DARKNESS**

ICEYE

A large satellite with multiple solar panel arrays is positioned on a launch pad. The satellite is oriented vertically, and the solar panels are partially deployed. The background shows a city skyline under a clear sky.

“ICEYE Vision Is To Deliver Persistent Monitoring System, For Truly Effective Change Detection.

ICEYE’s Constellation Of New Space Satellites Unlocks New Access To Valuable Data On Any Location On Earth – Day And Night, Through The Clouds, And Multiple Times Per Day.”

A photograph of a satellite in a test chamber. The satellite is a long, rectangular object with several panels, mounted on a complex mechanical structure. Two technicians in white lab coats are working on the satellite. The chamber is filled with large, white, cross-shaped absorbers on the walls and a dense forest of dark, pointed absorbers on the floor. The lighting is dramatic, with the white absorbers glowing against the dark background.

WORLD FIRST & WORLD LEADING

**MINIATURIZED  
SAR SATELLITES**



**JOSEF ASCHBACHER**

DIRECTOR GENERAL,  
EUROPEAN SPACE AGENCY



“

SAR on smallsats?  
Unthinkable a few years ago.  
ICEYE has done it.

”

# 21 SATELLITES

LAUNCHED TO DATE



Credit: SpaceX, Exolaunch

25<sup>TH</sup> OF MAY 2022

## 5 NEW SATELLITES LAUNCHED

ON SPACEX'S FALCON 9 VIA EXOLAUNCH

INCLUDING BOTH COMMERCIAL AND DEDICATED CUSTOMER MISSIONS



**MAKE THE RIGHT DECISIONS FAST**

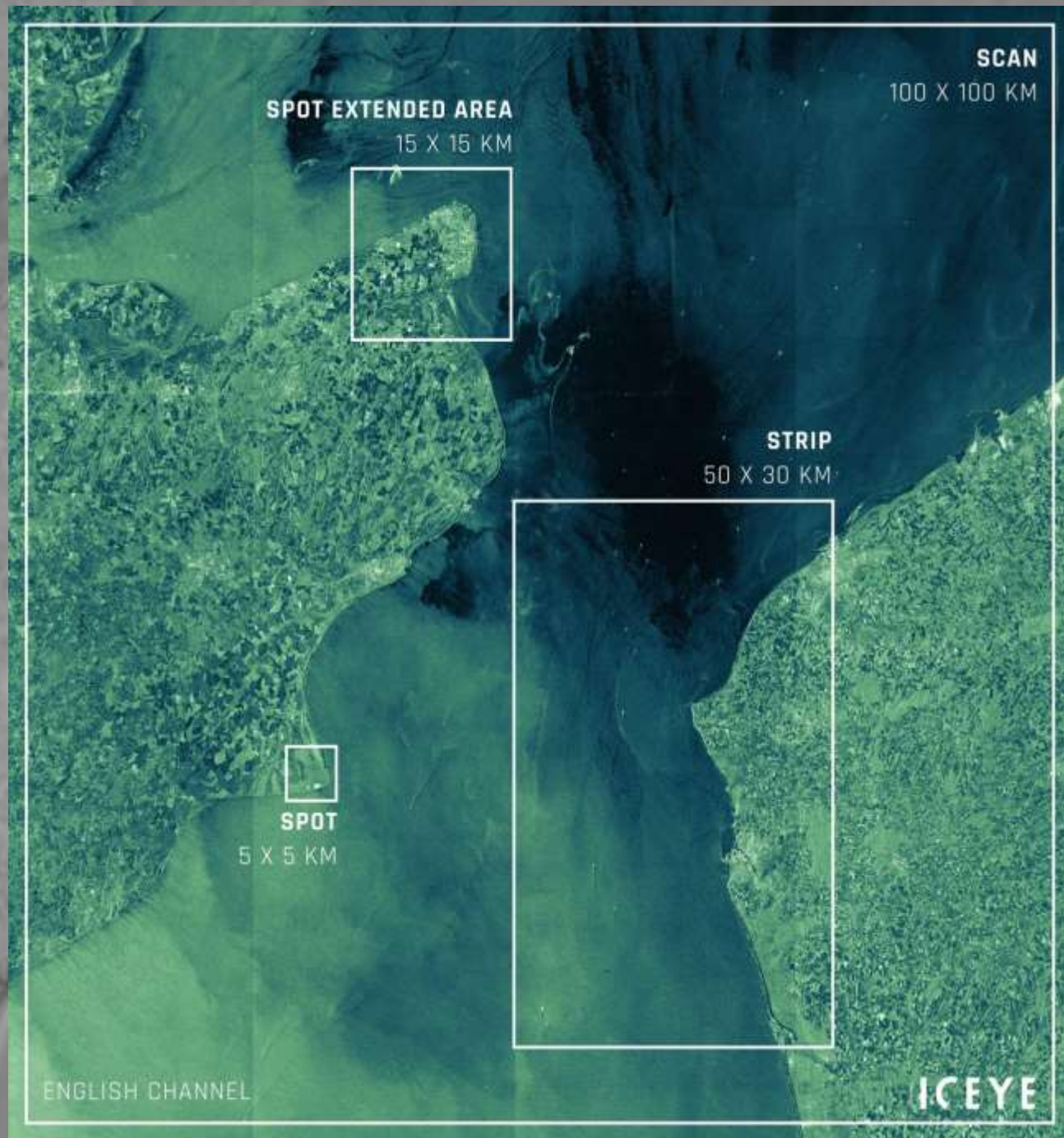
SEE THE DETAIL, UNDERSTAND THE CONTEXT

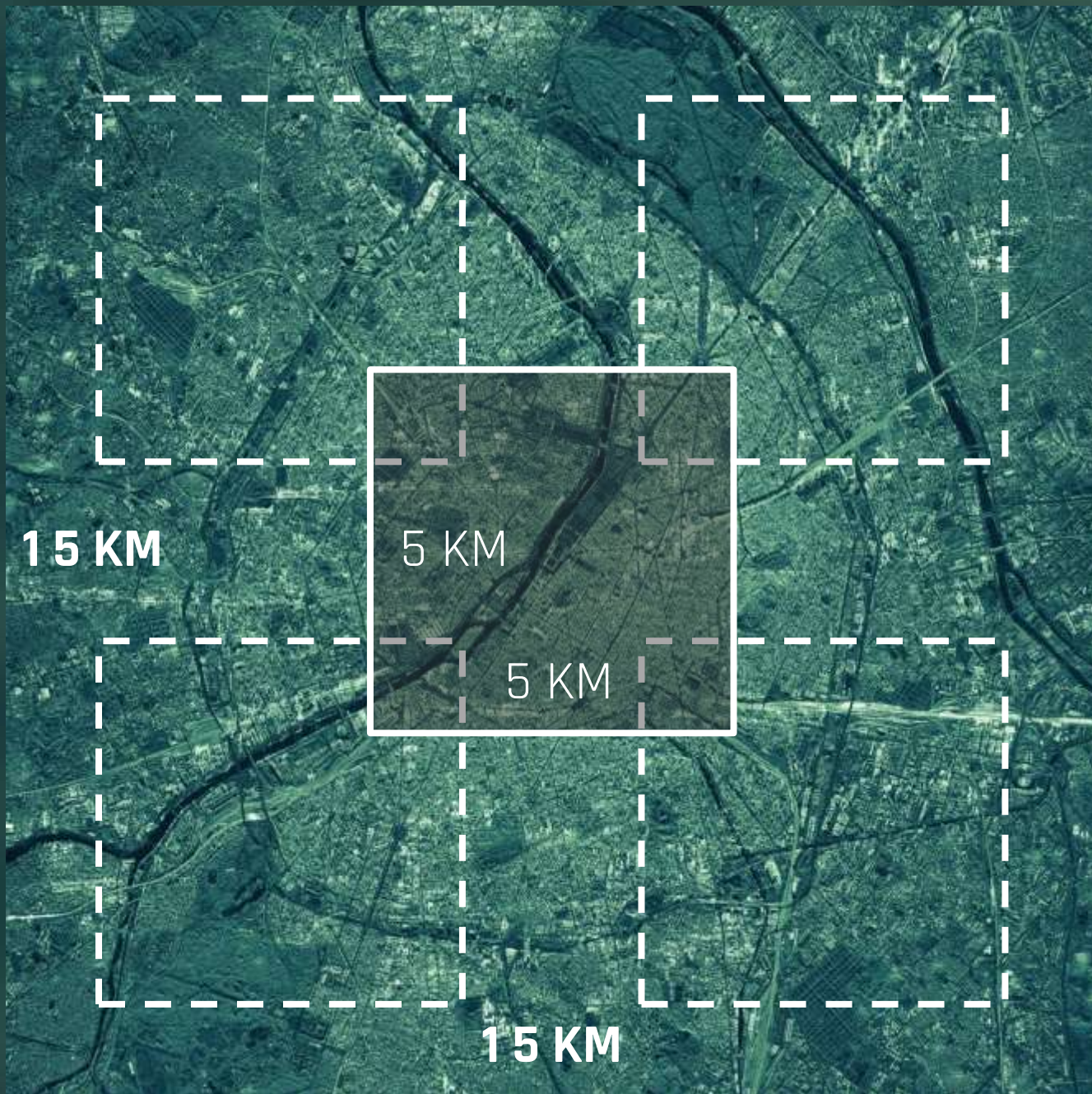
**UP TO 25 CM**

RESOLUTION

**UP TO 10.000 KM<sup>2</sup>**

SCENE SIZE





SPOT EXTENDED AREA

## THE WORLD'S LARGEST VERY HIGH RESOLUTION SAR MODE

**9 TIMES THE AREA**

IN COMPARISON TO A STANDARD SPOT IMAGE

**INFORMATION ON MULTIPLE CLUSTERED AOIs**

WITH A SINGLE SATELLITE PASS, IN ONE IMAGE

---

## ICEYE SCAN MODE

### GENERAL INFORMATION

# WORLD'S FIRST

WIDE AREA IMAGING WITH  
THE NEW SPACE SATELLITES

# 10.000 KM<sup>2</sup>

IN A SINGLE  
SAR IMAGE

# KEY SEA ROUTES

COVERED WITH  
A SINGLE ACQUISITION

# WHAT IS PERSISTENT MONITORING?

HIGH  
REVISIT

HIGH  
AGILITY

HIGH  
RESOLUTION

HIGH  
SENSITIVITY

HIGH  
COVERAGE

FAST  
DELIVERY

A satellite is shown in orbit above Earth. The satellite has a large, rectangular body with various instruments and a large, flat solar panel extending from it. The Earth's surface is visible below, showing clouds and landmasses. The overall image has a greenish tint.

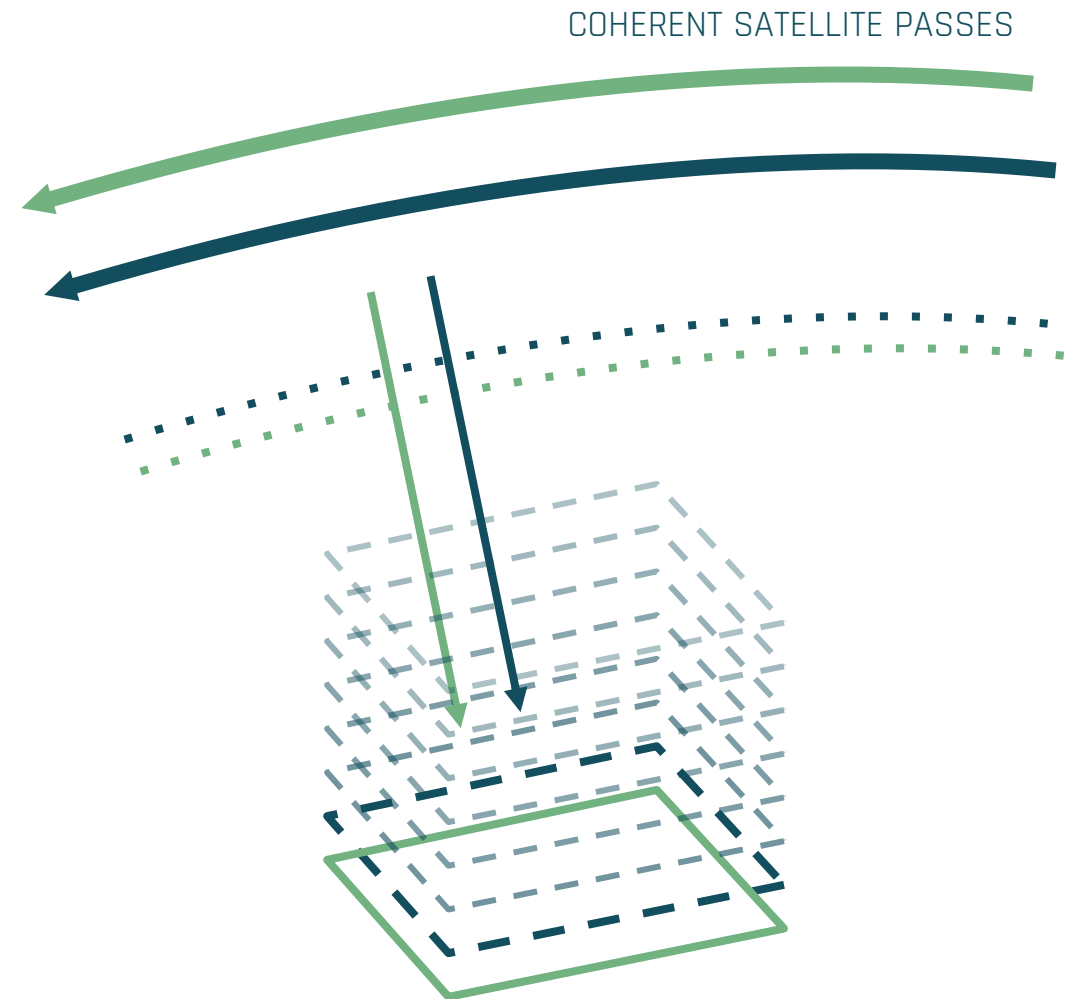
WORLD'S FIRST  
**DAILY COHERENT  
GROUND TRACK REPEAT**

DAILY COHERENT GROUND TRACK REPEAT  
**HOW DOES IT WORK?**

VERY PRECISE SATELLITE PASSES ENABLE  
ACQUIRING **UNIFORM SAR IMAGES**

WHAT ENABLES

EXTRACTING INFORMATION ABOUT GROUND  
CHANGES **TO A LEVEL UNREACHABLE TO  
NON-COHERENT IMAGERY.**





**Example ICEYE Daily  
Ground Track Repeat**  
amplitude data stack  
acquired over the Port of  
Rotterdam, the  
Netherlands

**EXAMPLE DAILY COHERENT  
GROUND TRACK REPEAT  
AMPLITUDE DATA STACK**



THE PORT OF ROTTERDAM,  
THE NETHERLANDS

**EXAMPLE DAILY COHERENT  
GROUND TRACK REPEAT  
AMPLITUDE DATA STACK**



THE PORT OF ROTTERDAM,  
THE NETHERLANDS

# DETAILED, DAILY INFORMATION ABOUT CHANGE

RED = NEGATIVE CHANGE  
BLUE = POSITIVE CHANGE



Example ICEYE Coherent Change Detection obtained from 3 daily coherent acquisitions in Mosul, Iraq presented as a video. In this way, the changes between specific CCDs are easy to spot.



# ICEYE PERSISTENT MONITORING FREQUENT REVISIT, RAPID DELIVERY

2020

**8 HOURS**

AVERAGE TIME FROM  
DOWNLINK TO DELIVERY

**12 HOURS**

NON-COHERENT REVISIT TIME

2021

**4 HOURS**

AVERAGE TIME FROM DOWNLINK  
TO DELIVERY

**8 HOURS**

NON-COHERENT REVISIT TIME

2022

**2 HOURS**

AVERAGE TIME FROM DOWNLINK  
TO DELIVERY

**5 HOURS**

NON-COHERENT REVISIT TIME



# **EMPOWERING SECURITY APPLICATIONS**

SPOT MODE APPLICATION:  
**VESSEL DETECTION  
AND CLASSIFICATION**



**DETECT AND CLASSIFY VESSELS**

**AIRCRAFT DETECTION  
AND CLASSIFICATION**



**DETECT AND CLASSIFY AIRCRAFT**

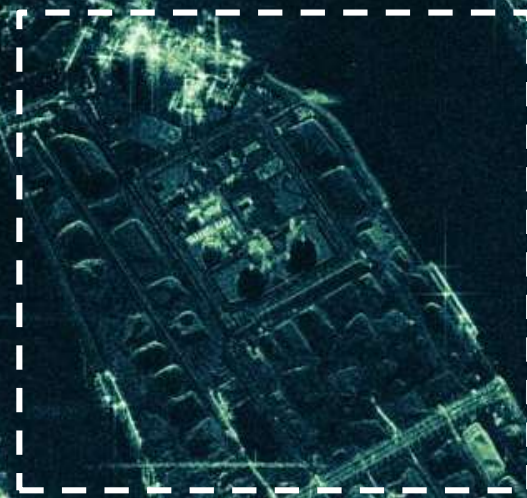
**PORT ACTIVITY MONITORING**  
**COMMODITY SHIPMENT ANALYSIS**

PORT OF ROTTERDAM, NETHERLANDS



**OIL TANKS**  
OIL STORAGE LEVEL ESTIMATION

**STOCKPILES**  
BULK COMMODITIES STORAGE ESTIMATION



**CONTAINERS**  
CONTAINER SHIPMENT ANALYSIS



## DETECT DARK VESSELS

BY COMBINING SAR IMAGERY  
WITH EXTERNAL DATA SUCH AS AIS

| Classification | Dark Vessel         |
|----------------|---------------------|
| Date           | 2019-Jan-30 06:36am |
| Latitude       | 25.215991           |
| Longitude      | 56.455724           |
| Type           | Unknown             |

**MONITOR KEY SEA ROUTES**  
WITH A SINGLE SAR IMAGE

VESSELS

**DETECT CONCENTRATION AND RELOCATION  
OF VEHICLES AND EQUIPMENT**



A satellite with multiple solar panel arrays is shown in space, orbiting Earth. The Earth's surface is visible on the left, showing cloud patterns. The background is a dark blue space with a starry field.

# ICEYE

# THANK YOU FOR YOUR ATTENTION

[ICEYE.COM](https://www.iceye.com)