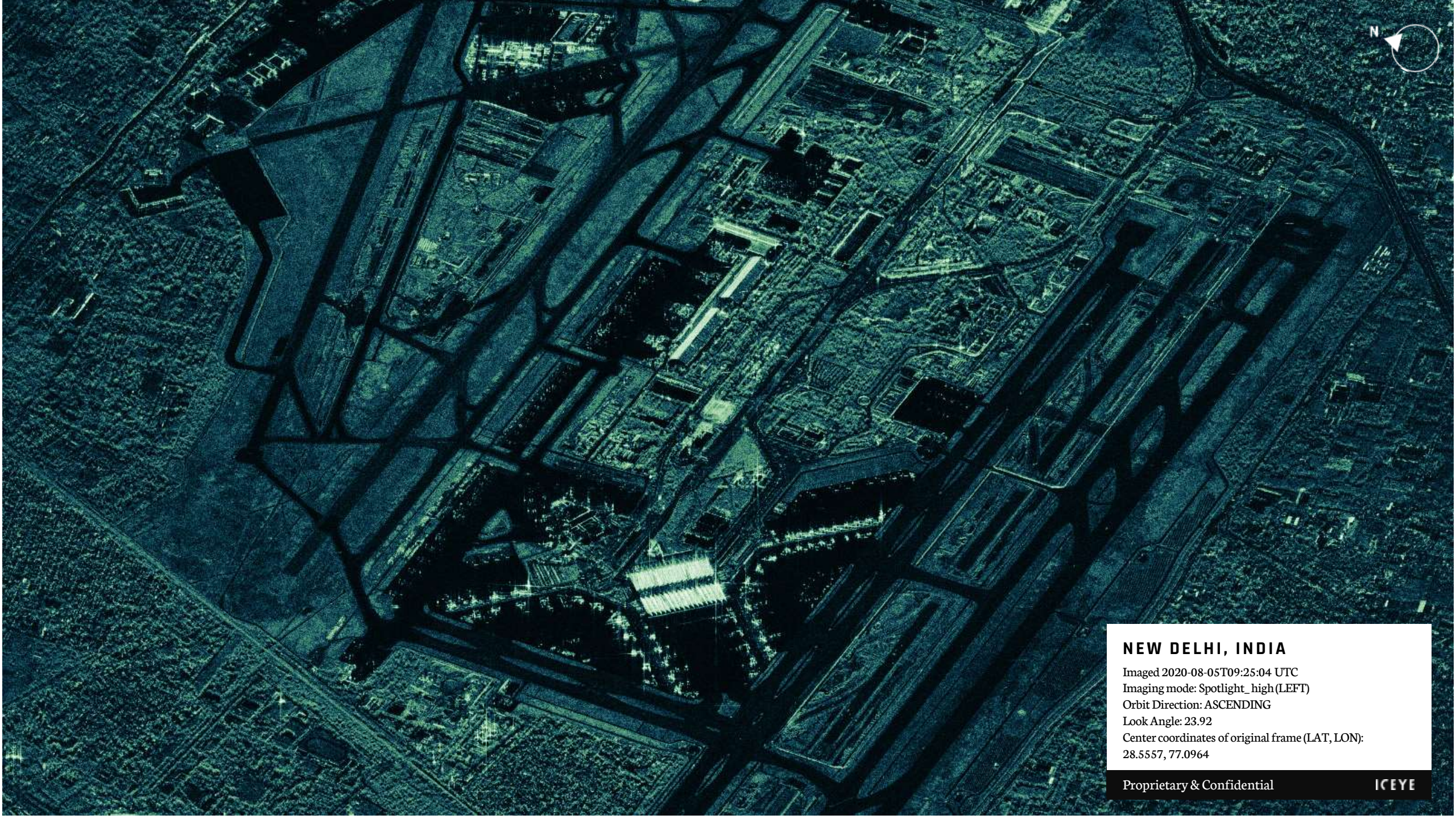
ICEYE

BETTER DECISION MAKING

WITH ICEYE'S PERSISTENT MONITORING

Andrey SHUMAKOV
Director, Global Partner Network
andrey.shumakov@iceye.fi



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

RADAR IMAGING

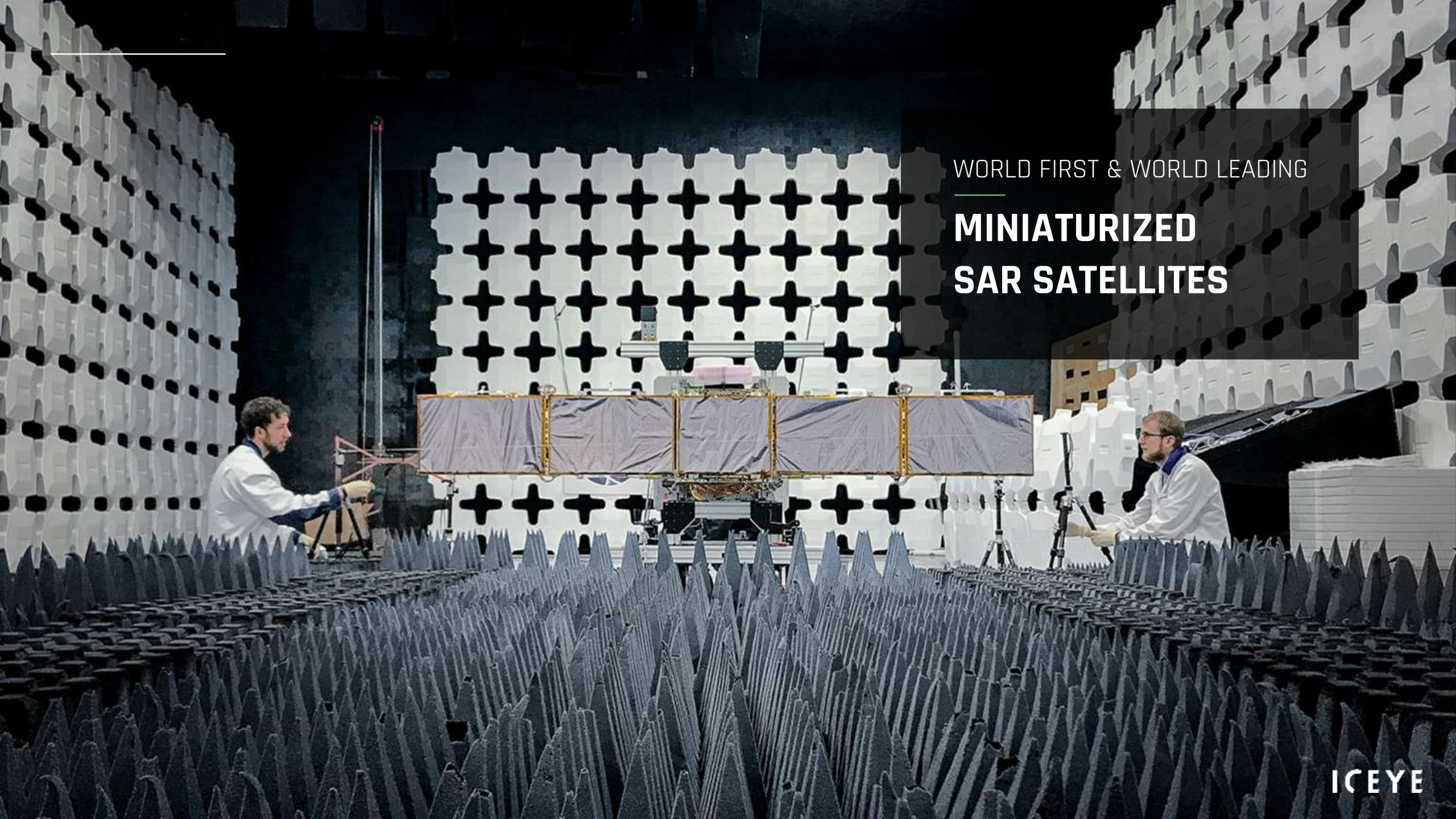
THROUGH CLOUDS THROUGH DARKNESS

ICEYE

"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."

ICEYE



WORLD FIRST & WORLD LEADING

MINIATURIZED SAR SATELLITES

ICEYE

JOSEF ASCHBACHER

DIRECTOR GENERAL,
EUROPEAN SPACE AGENCY

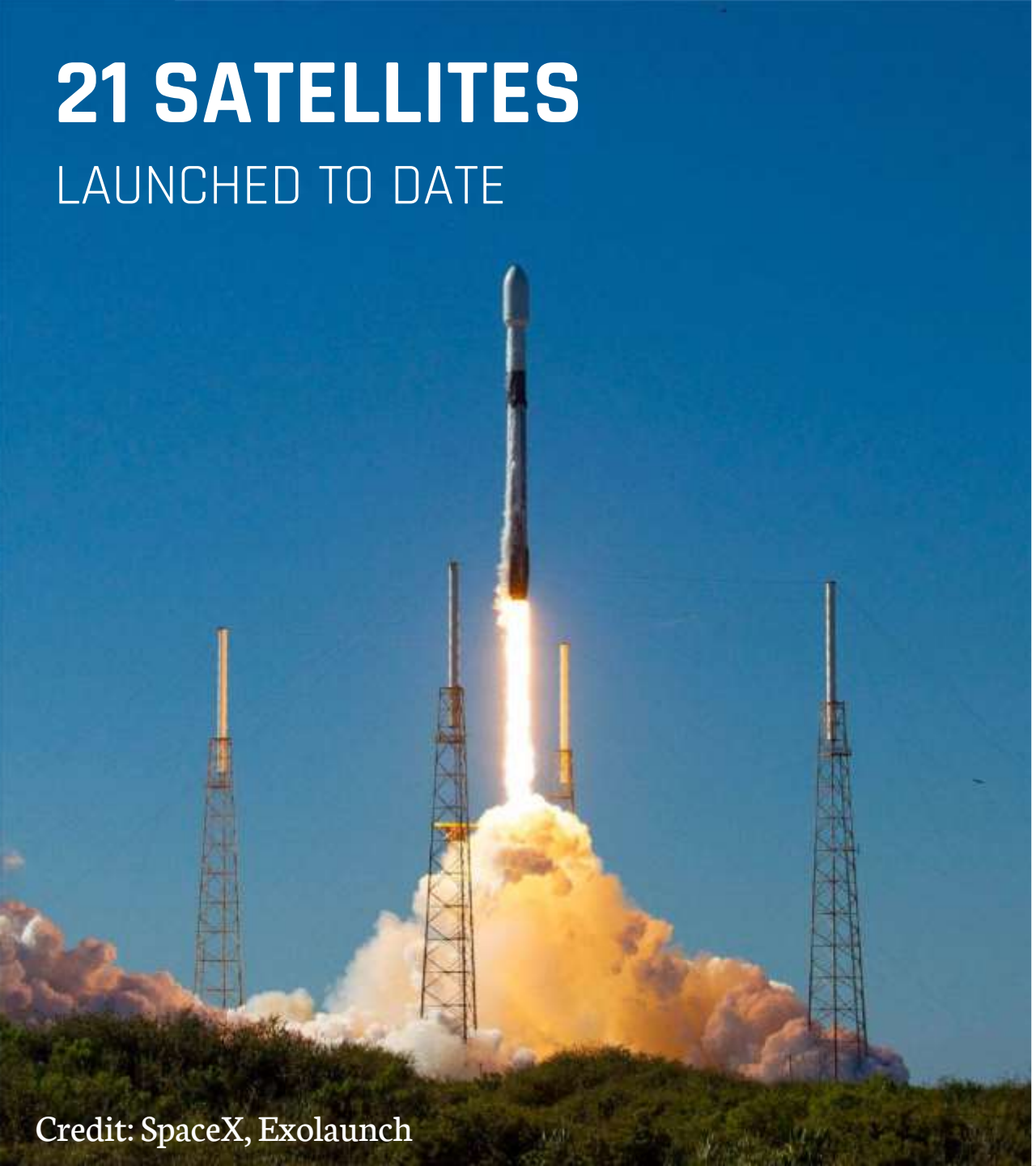
esa

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

ICEYE

21 SATELLITES

LAUNCHED TO DATE



Credit: SpaceX, Exolaunch

25TH 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

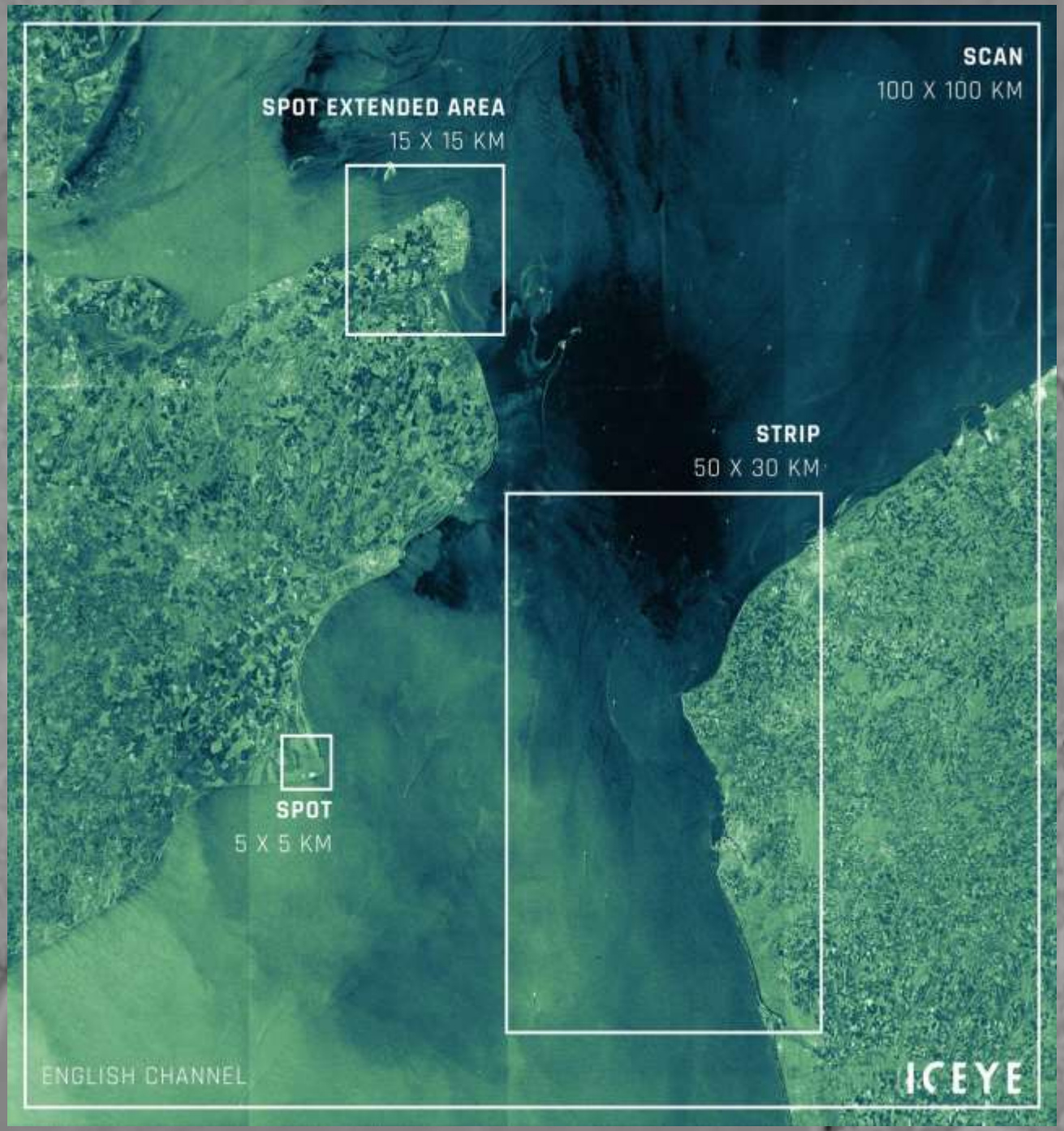
SEE THE DETAIL, UNDERSTAND THE CONTEXT

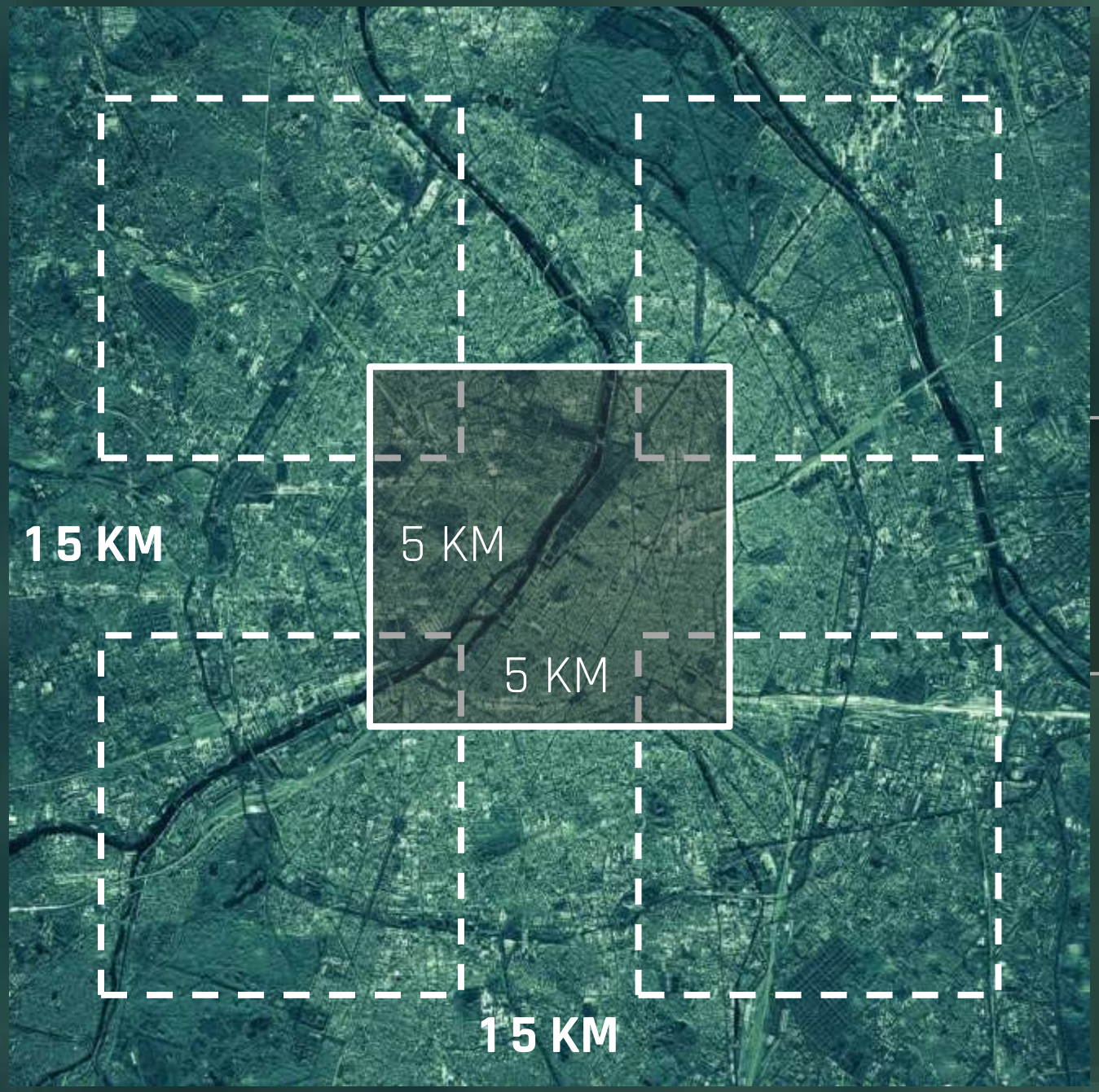
UP TO 25 CM

RESOLUTION

UP TO 10.000 KM²

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

ICEYE SCAN MODE

GENERAL INFORMATION

WORLD'S FIRST

WIDE AREA IMAGING WITH
THE NEW SPACE SATELLITES

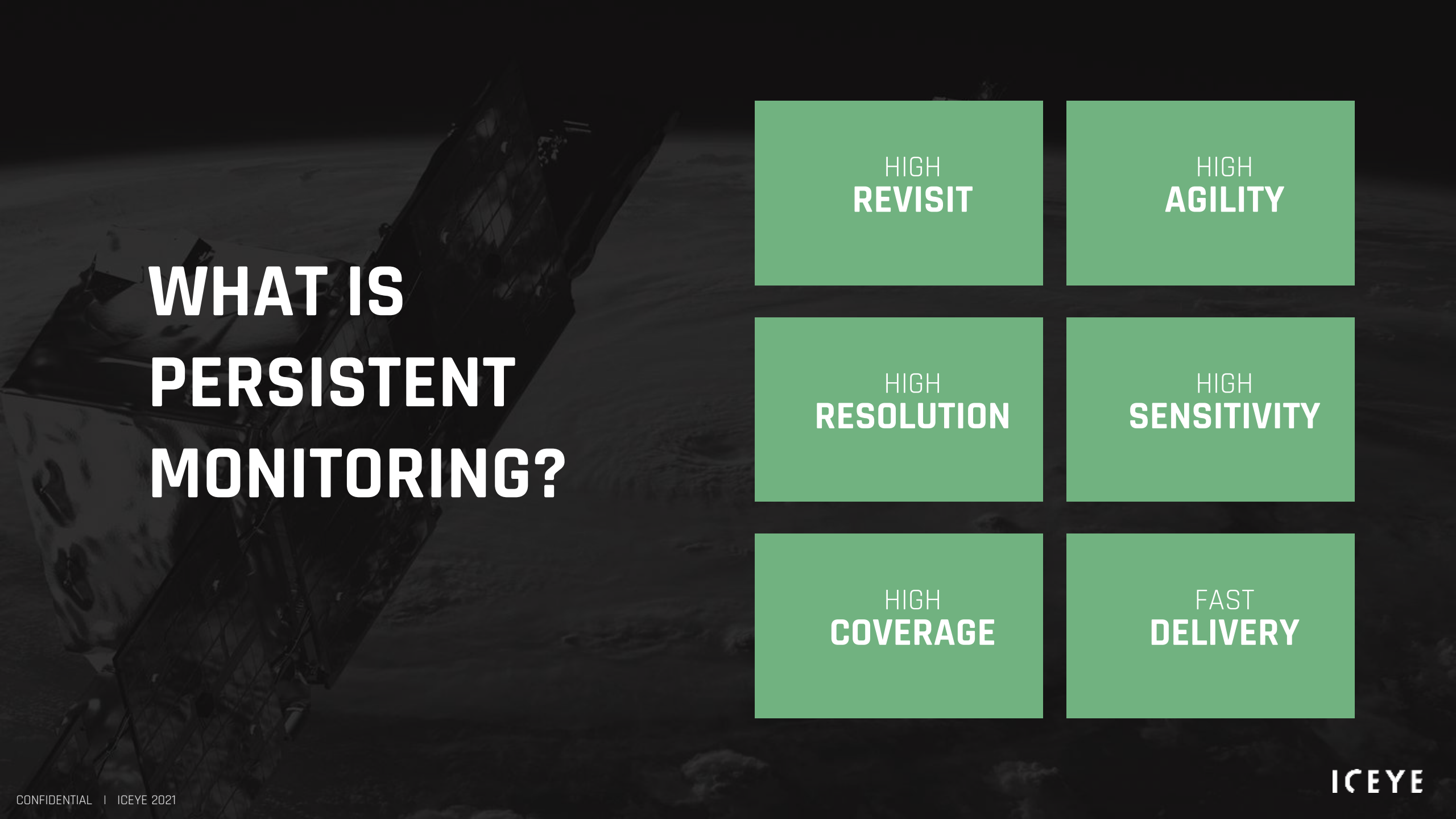
10.000 KM^2

IN A SINGLE
SAR IMAGE

KEY SEA ROUTES

COVERED WITH
A SINGLE ACQUISITION

ICEYE



WHAT IS PERSISTENT MONITORING?

HIGH
REVISIT

HIGH
AGILITY

HIGH
RESOLUTION

HIGH
SENSITIVITY

HIGH
COVERAGE

FAST
DELIVERY

ICEYE


WORLD'S FIRST
DAILY COHERENT
GROUND TRACK REPEAT
ICEYE

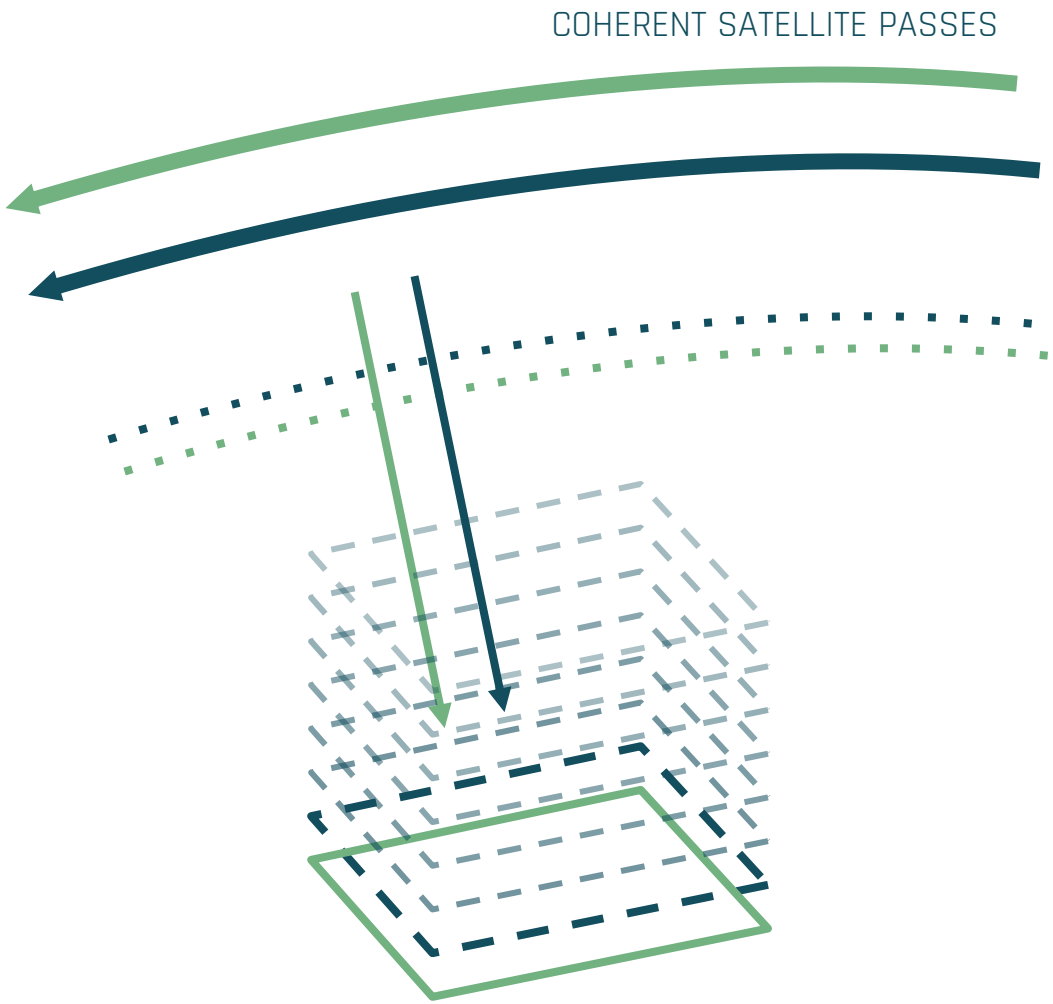
DAILY COHERENT GROUND TRACK REPEAT

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.**



ICEYE

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

ICEYE

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

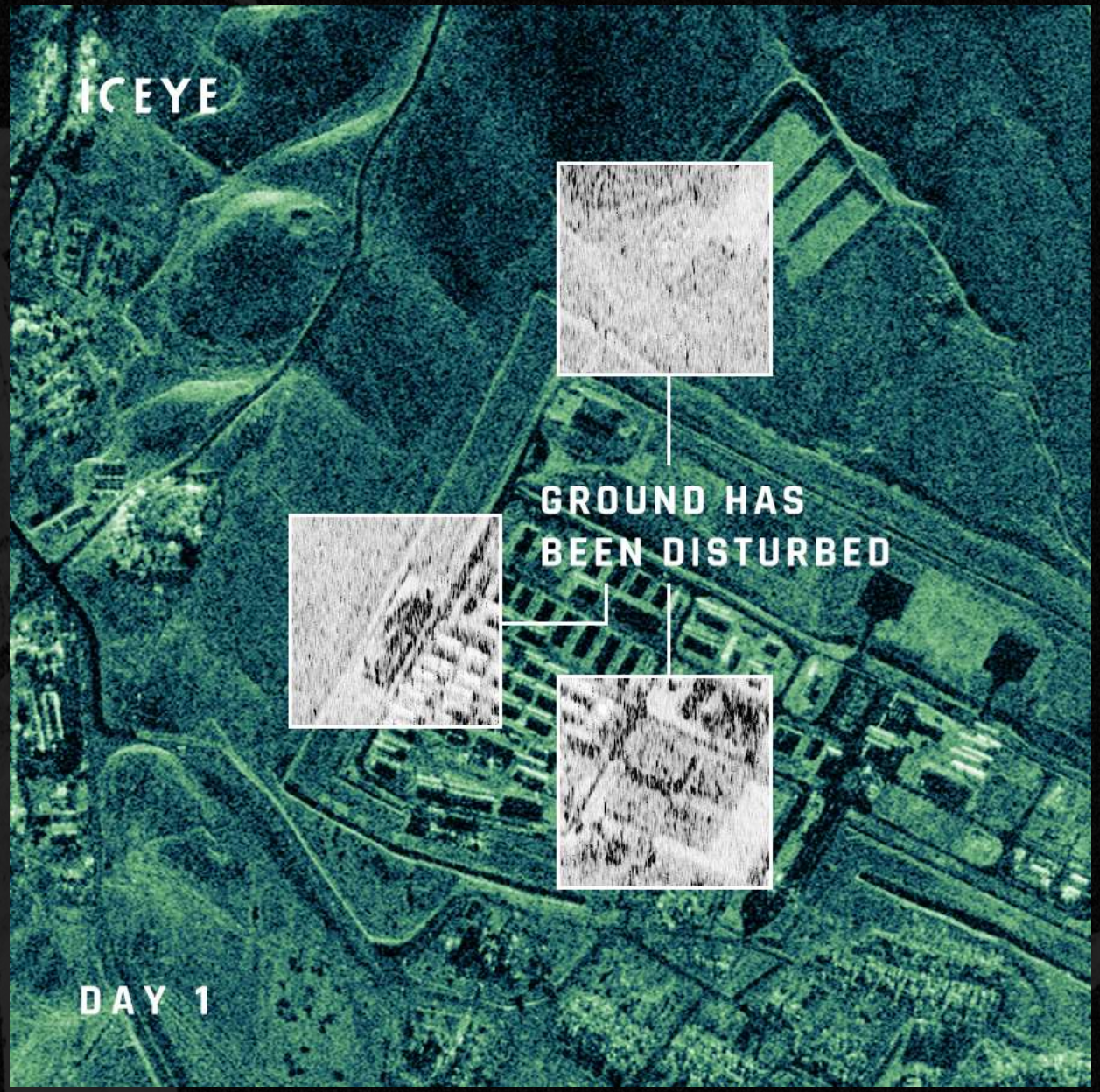
DETAILED, DAILY INFORMATION ABOUT CHANGE

RED = NEGATIVE CHANGE

BLUE = POSITIVE CHANGE

Port of Rotterdam, Netherlands

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

ICEYE

EMPOWERING SECURITY APPLICATIONS

SPOT MODE APPLICATION:

VESSEL DETECTION AND CLASSIFICATION

ICEYE

DETECT AND CLASSIFY VESSELS

FUJAIRAH, UAE

AIRCRAFT DETECTION AND CLASSIFICATION

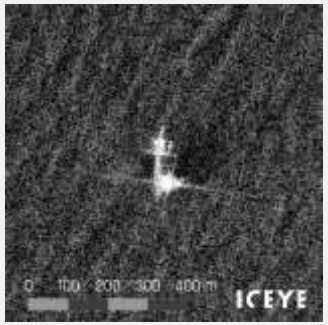
DUBAI AIRPORT, UAE


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
ICEYE

STRIP MODE APPLICATION:

DARK VESSEL DETECTION

ICEYE



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

DETECT DARK VESSELS

BY COMBINING SAR IMAGERY
WITH EXTERNAL DATA SUCH AS AIS

FUJAIRAH, UAE

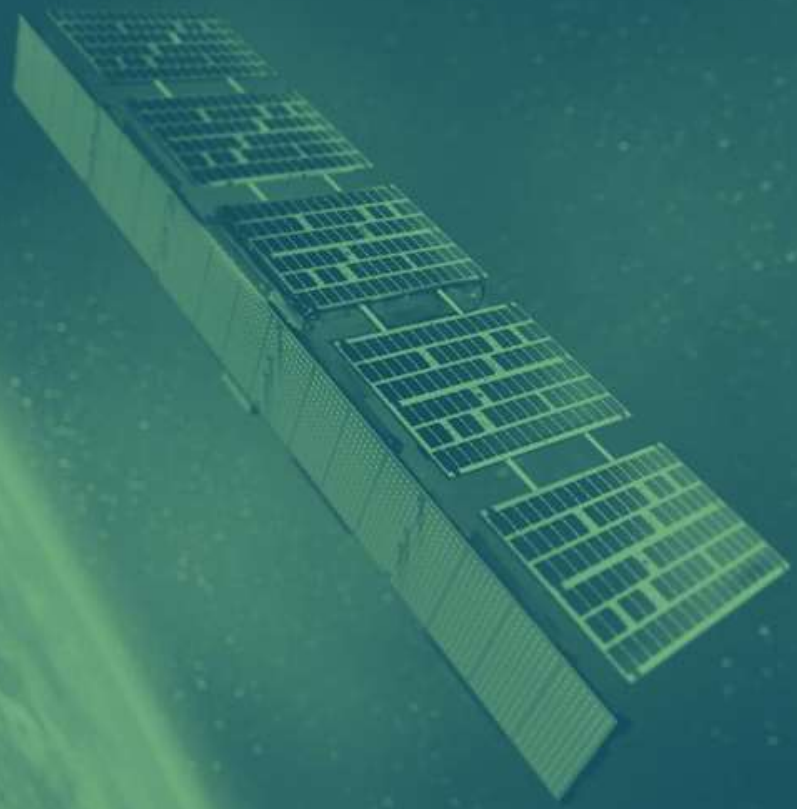
GIBRALTAR STRAIT

MONITOR KEY SEA ROUTES

WITH A SINGLE SAR IMAGE

DETECT CONCENTRATION AND RELOCATION OF VEHICLES AND EQUIPMENT

ICEYE



THANK YOU FOR YOUR ATTENTION

ICEYE.COM