

SAR 101

WHAT IS A SAR SATELLITE?

- SAR = Synthetic Aperture Radar
- A type of satellite that uses radar
- An alternative way to gather data, take a picture & measure relationships

URSA

HOW SAR WORKS

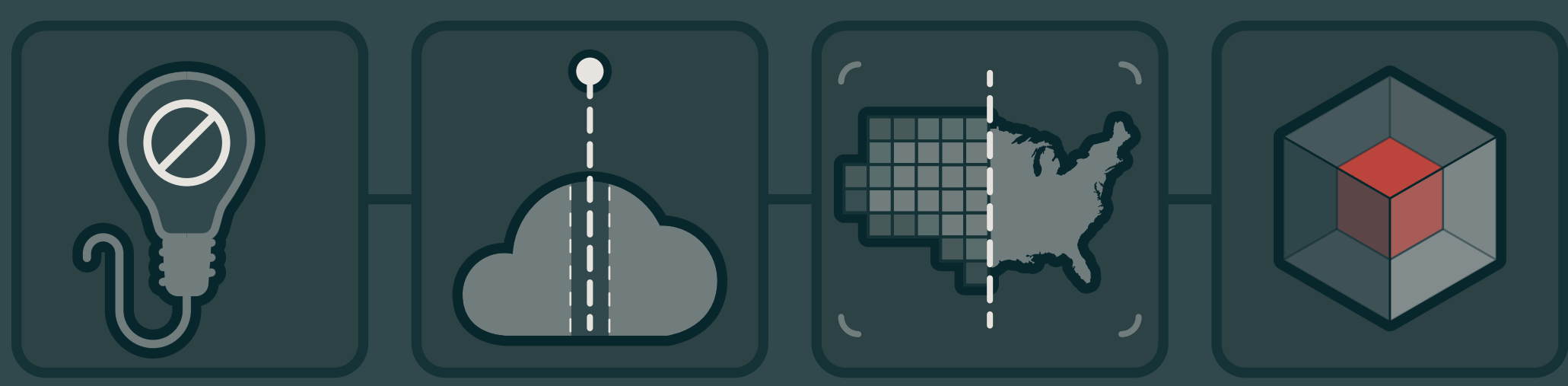
THINK ECHOLOCATION, LIKE A WHALE

- SAR sends out energy, bounces that energy off something and returns the energy as information that:
 - Is multi-dimensional
 - Includes: time, geometry, signal data & elevation
 - Is commonly formed into an image
- With this, we can measure: speed, distance, direction & presence

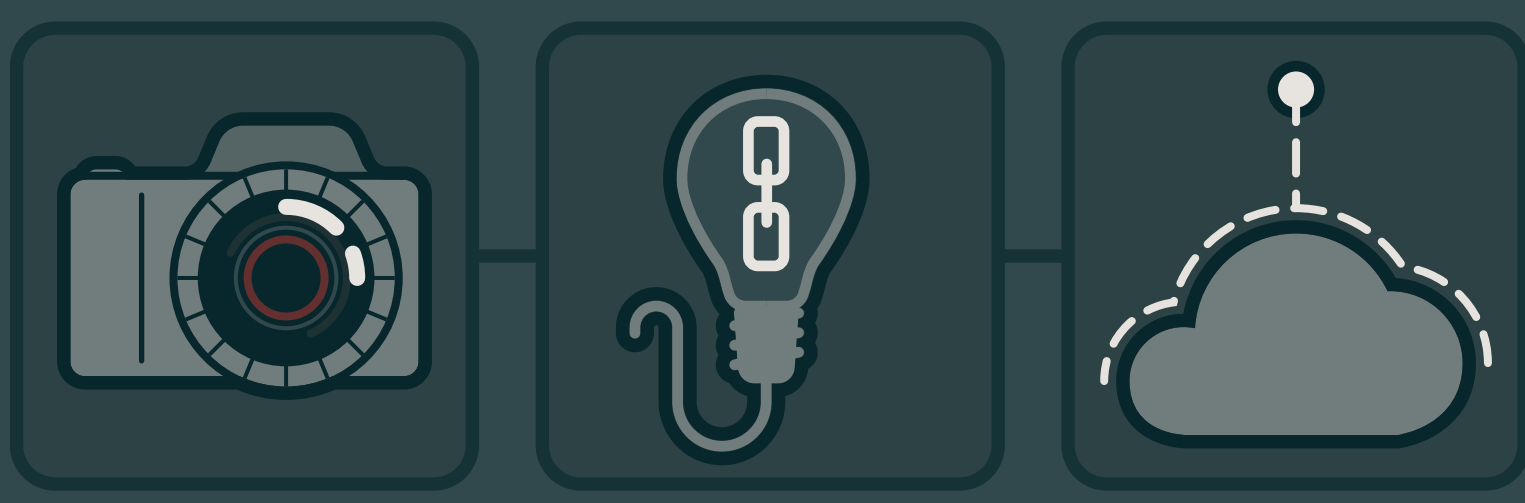
THESE MEASUREMENTS ARE REPEATABLE FOR HIGH PRECISION RESULTS



SAR



OPTICAL



SAR IS UNIQUE

UNLIKE OTHER GEOSPATIAL OR EARTH OBSERVATION (EO) TECH, SAR:

- Does not require light
- Is unaffected by clouds
- Can gather both low resolution images for large area search & high resolution for very detailed views
- Can be processed, examined & combined in unique ways

IN COMPARISON, AN OPTICAL SATELLITE:

- Takes an image directly, like a camera
- Needs light
- Cannot see through most clouds

SAR'S UNIQUELY POWERFUL CAPABILITIES ALLOW FOR LOCATING, IDENTIFYING AND MONITORING OBJECTS AS WELL AS DETECTING CHANGES, CONDUCTING SEARCHES AND PENETRATING GROUND MATERIALS.

WITH THESE CAPABILITIES, SAR CAN HELP:

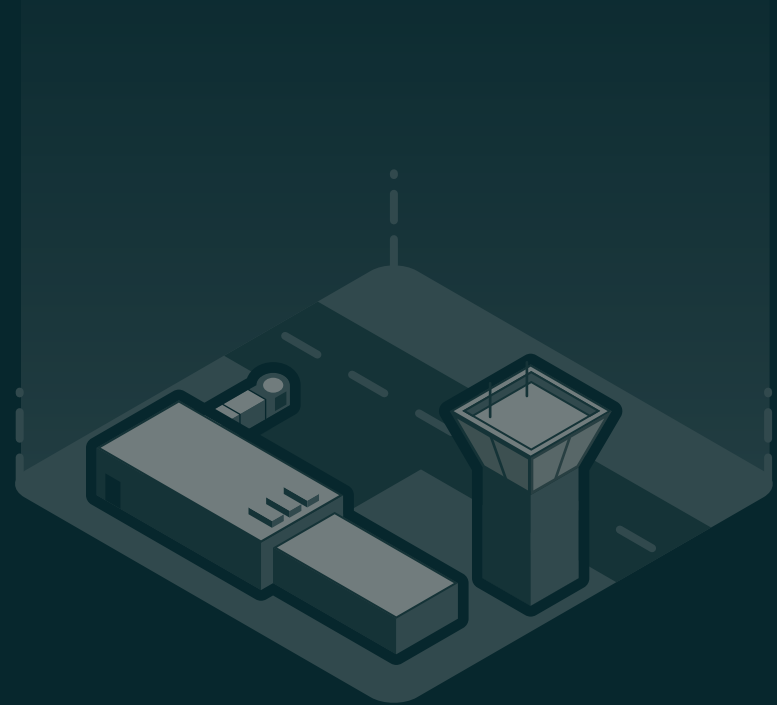
OBSERVE SEA ICE & GLACIER CHANGES



MEASURE RAINFALL



SURVEIL AIRPORTS



TRACK SHIPS



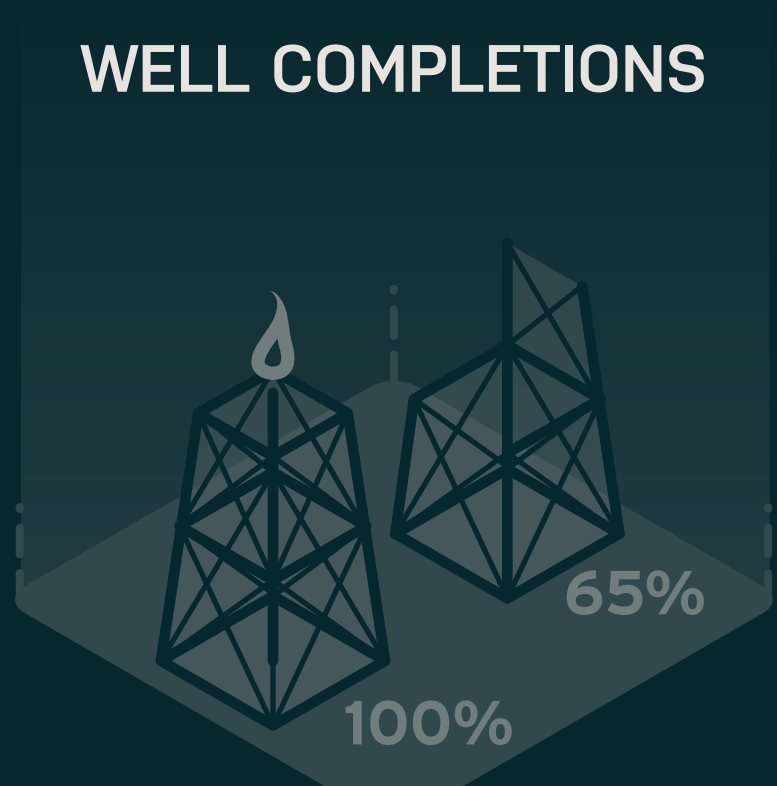
COUNT CARS



DETERMINE CRUDE OIL IN STORAGE TANKS



MONITOR OIL WELL COMPLETIONS



SIZE BULK COMMODITY PILES

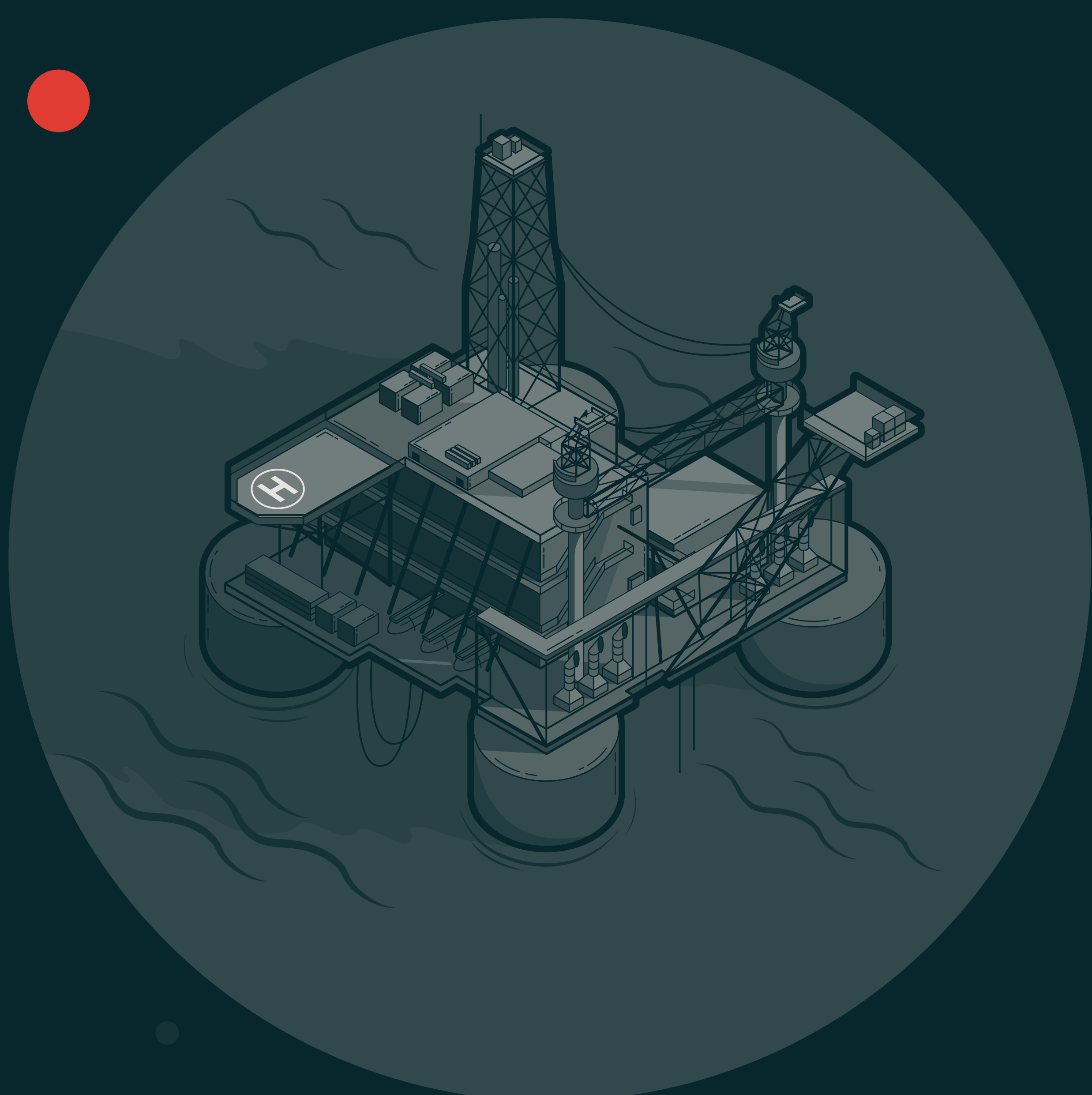


SOLVE WITH SAR

COMBINE SAR WITH OTHER EO TECH TO SOLVE HARD PROBLEMS SUCH AS:

OIL RIG POLLUTION MONITORING

- Combine active, periodic imaging of defined rig locations with SAR and EO / Multi Spectral Imagery (MSI)
- Show impacts of operational pollution generated and where pollutants travel
- By monitoring other signals, such as AIS for ships (Automated Identification System), Ursa can evaluate impact of support vessels, too



URSA'S UNIQUE APPROACH

WE AGGREGATE SAR DATA FROM THE WORLD'S LARGEST NETWORK OF 15+ SATELLITES AROUND THE GLOBE AND FUSE IT WITH OTHER SOURCES. OUR PROCESS INCLUDES:

- Automation, machine learning & human sense checking
 - A strict QA process
- Expert analysis & insights

These capabilities make Ursa's SAR analytics-as-a-service a superior source of alternative data. Visit ursaspace.com/evaluation for a free data evaluation or to discuss our custom monitoring services.

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