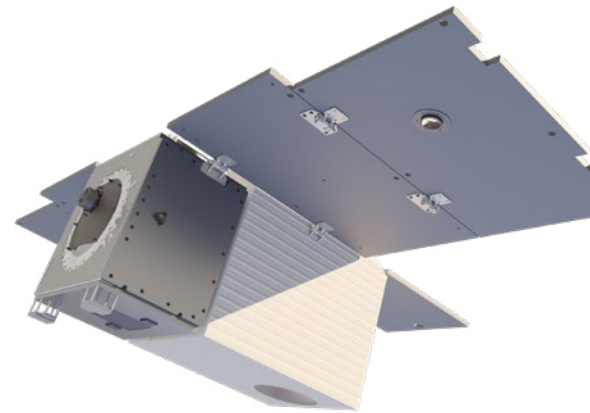# planet.

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Planet's Groundbreaking Hyperspectral Mission

New Possibilities for Measuring and Monitoring Activity

NUCLEAR FACILITY • Natanz, Iran • December 1, 2020

DETECT AND IDENTIFY TARGETS THAT CANNOT BE FOUND WITH MULTISPECTRAL IMAGING

Planet is designing a groundbreaking hyperspectral satellite constellation, scheduled to be launched in 2023, that aims to create a paradigm shift in the way National Security organizations understand human activities and their operational and economic impacts.

HYPERSPECTRAL VALUE

Planet's hyperspectral mission will measure energy in the visible through shortwave infrared (400-2500 nm) in over 400 spectrally contiguous bands with 30-meter ground sample distance (GSD).

Comprehensive
Provides coverage areas that airplane or individuals on their own cannot capture at scale

Repeatable
Captures unexpected and fleeting events through intraday collection

Precise
High spectral resolution and sensitivity improves material detection and classification

COLLECTIVE ACTION

Planet's hyperspectral constellation is a first of its kind public-private partnership consisting of a broad-based coalition of industry, government, philanthropies, and academic institutions. Key partners include:

CARBON MAPPER | JPL Jet Propulsion Laboratory California Institute of Technology | ASU | CALIFORNIA AIR RESOURCES BOARD | THE UNIVERSITY OF ARIZONA

RMI ENERGY TRANSFORMED | Bloomberg Philanthropies | HIGHTIDE FOUNDATION | Grantham Foundation for the Protection of the Environment

NATIONAL SECURITY BENEFITS

Planet understands that Defense and Intelligence experts need collection diversity to understand their operational environment. By identifying the spectral "signatures" of chemicals, materials, and processes across the globe, hyperspectral data help analysts, tactical decision makers, and policymakers identify otherwise hidden activity and track human-driven planetary change. This, in turn, helps organizations fill intelligence gaps and mitigate risk.

APPLICATIONS OF HYPERSPECTRAL DATA

CAMOUFLAGE DETECTION

As nation states become better at denial and deception operations, hyperspectral data could be used to defeat advanced camouflage for a breadth of cover types.

DARK MARITIME VESSEL TRACKING

When nation states, terrorists, or criminal organizations want to hide their maritime activities, it is difficult to maintain custody of vessels with convetional methods (AIS, panchromtic imaging, etc). Hyperspectral data provide an advanced tool in tracking dark maritime vessels. A ship's fundamental properties (paint, composition, emissions, etc.) create a unique spectral signature that cannot be turned off.

ILLICIT CROP PRODUCTION

Hyperspectral data can be used to identify illicit crop production, monitor vegetation health, productivity, and volume, and provide National Security experts a way to remotely assess the scale and scope of drug production. This, in turn, can be used to aid in counternarcotics operations.

WILDFIRE DETECTION & MITIGATION

The increasing frequency and intensity of wildfires presents new worldwide security challenges. Hyperspectral satellite data can support more precise estimation of wildfire risk which, in turn, can provide policymakers and security experts with detailed risk analyses and tools for engagement with partners.

ABOUT

Planet is the leading provider of global, daily satellite imagery and geospatial solutions. Planet is driven by a mission to image all of Earth's landmass every day, and make global change visible, accessible, and actionable. Planet provides mission-critical data, advanced insights, and software solutions to over 700 customers, comprising the world's leading agriculture, forestry, intelligence, education and finance companies and government agencies, enabling users to simply and effectively derive unique value from satellite imagery.

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