



Big Data Analytics

REGIONAL TRAINING ON THE USE OF DRONES, SATELLITE IMAGERY AND GIS

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See a better world.

DigitalGlobe has an archive going back to 1999, and continues to collect a large amount of imagery every day



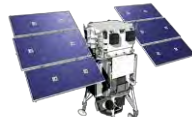
DigitalGlobe is leading the imagery industry with high resolution imagery & geospatial analytics



IKONOS®
.82 meter resolution
1999 - 2015
9 m CE90



QuickBird®
.65 meter resolution
2001 - 2015
23 m CE90



WorldView-1®
.50 meter resolution
2007
<4 m CE90



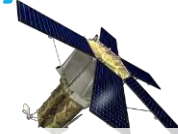
GeoEye-1®
.46 meter resolution
2008
<3.5 m CE90



WorldView-2®
.46 meter resolution
2009
<3.5 m CE90



WorldView-3®
.30 meter resolution
2014
<3.0 m CE90



WorldView-4®
.30 meter resolution
2016
<3.0 m CE90

CURRENTLY IMAGING IN ORBIT

AVAILABLE VIA IMAGERY LIBRARY



A world map showing the distribution of DigitalGlobe satellite imagery collections over a three-day period. The map is overlaid with numerous small orange dots, indicating the locations of satellite passes. The dots are densely packed in some regions, particularly in North America, Europe, and parts of Asia, and more sparse in others. The map uses a dark blue color for the oceans and a mix of green and brown for the landmasses.

DigitalGlobe collections over a 3 day period

three days

FAO Workshop 2018

A world map showing a dense distribution of orange dots representing digital globe collections. The dots are most concentrated in North America, Europe, and parts of Asia, with fewer dots in South America, Africa, and Australia. The background is a dark blue/black color.

DigitalGlobe collections over a 2 week period

two weeks

FAO Workshop 2018

DigitalGlobe collections over a 3 month period: covers almost 75%-80% of the world

A world map where the landmasses are filled with a dense, textured pattern of orange and green, representing satellite imagery. The oceans are a dark blue. The text 'three months' is overlaid on the bottom right of the map.

three months

FAO Workshop 2018

DigitalGlobe collects more than 3.5 million km² of imagery every day: this is big data

3,500,000 km² collected **EVERY DAY**

13,200,000,000,000 pixels



All 30-50 cm resolution
Multi- and Super-Spectral Capabilities

DigitalGlobe's entire archive amounts to 100 PB of data

100 Petabyte Archive

Satellite imagery is more than a pretty picture, it has information and intelligence hidden inside

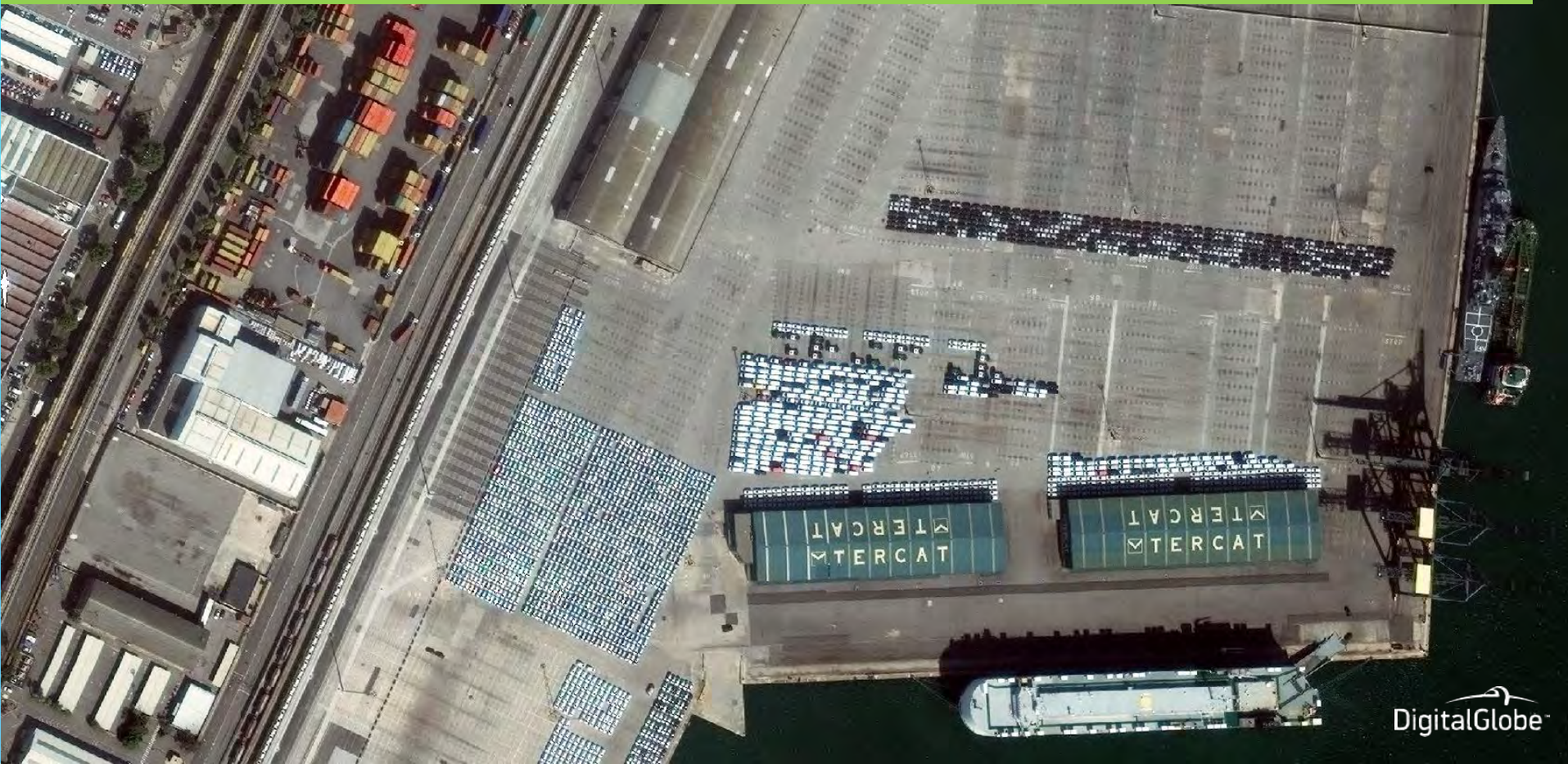


IMAGE © 2015 PLANET LABS INC.

Sometimes it is difficult to extract the information from middle to lower resolution images



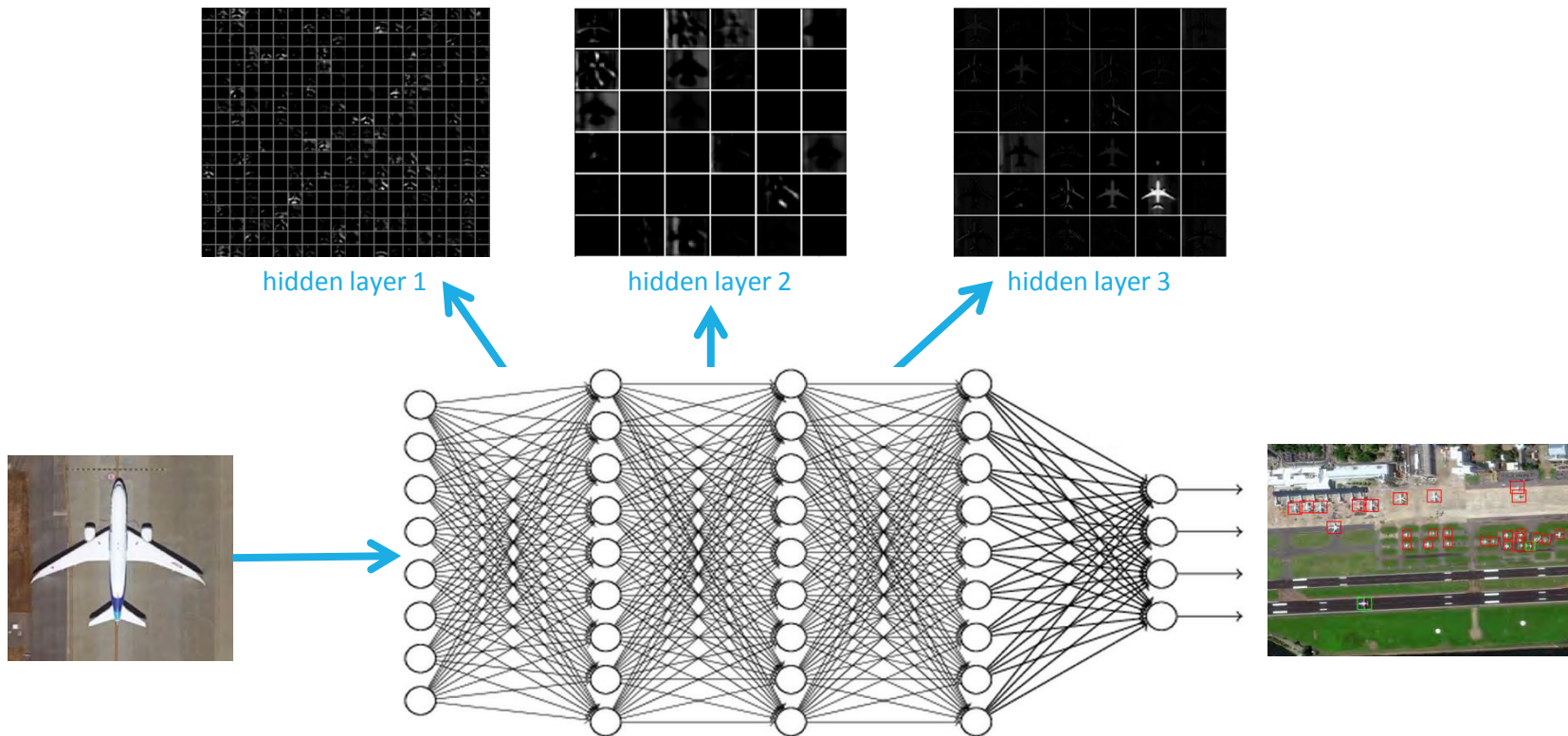
And you need high resolution images to understand the information inside—
and extract value from the pixels



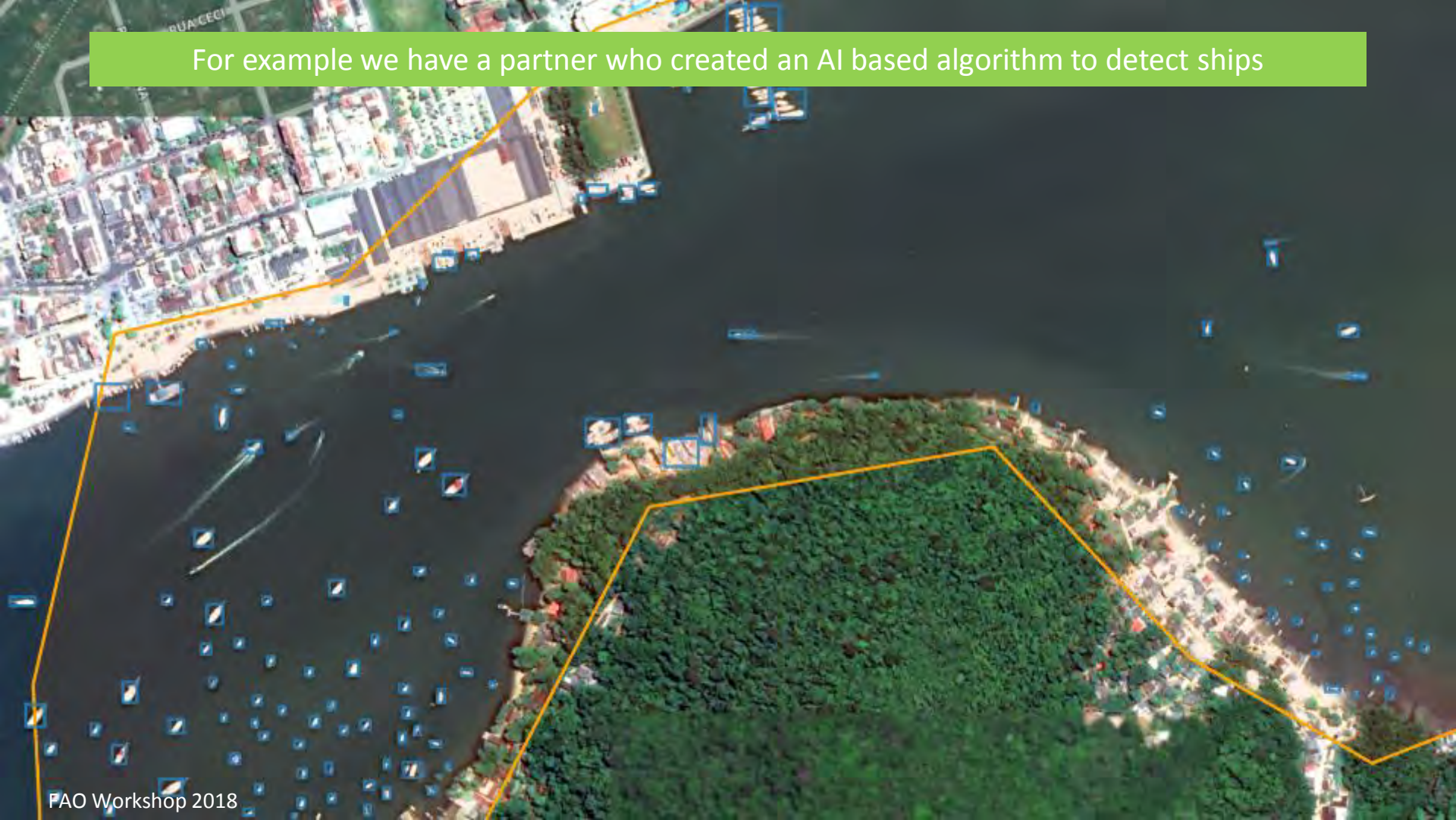


How Do We Get The Information Out?

Machine Learning

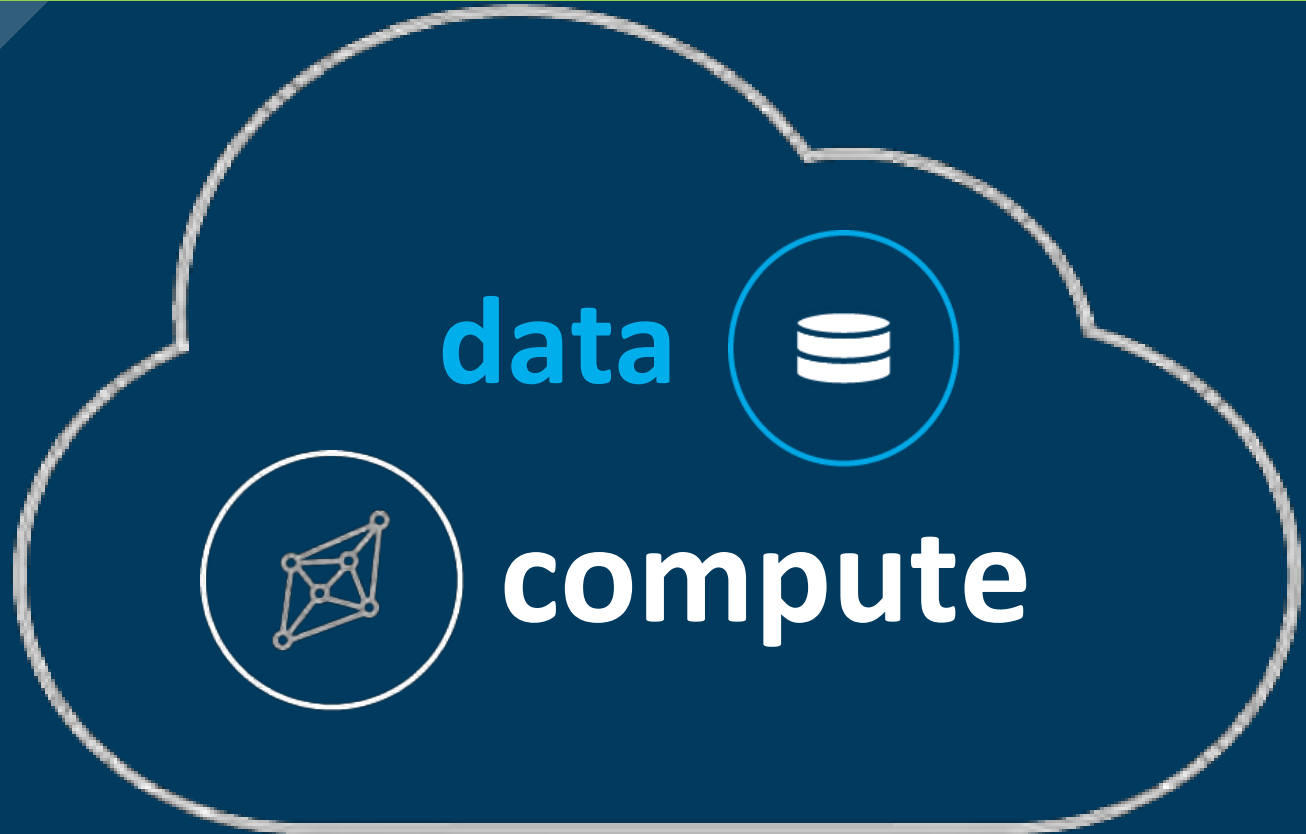


For example we have a partner who created an AI based algorithm to detect ships

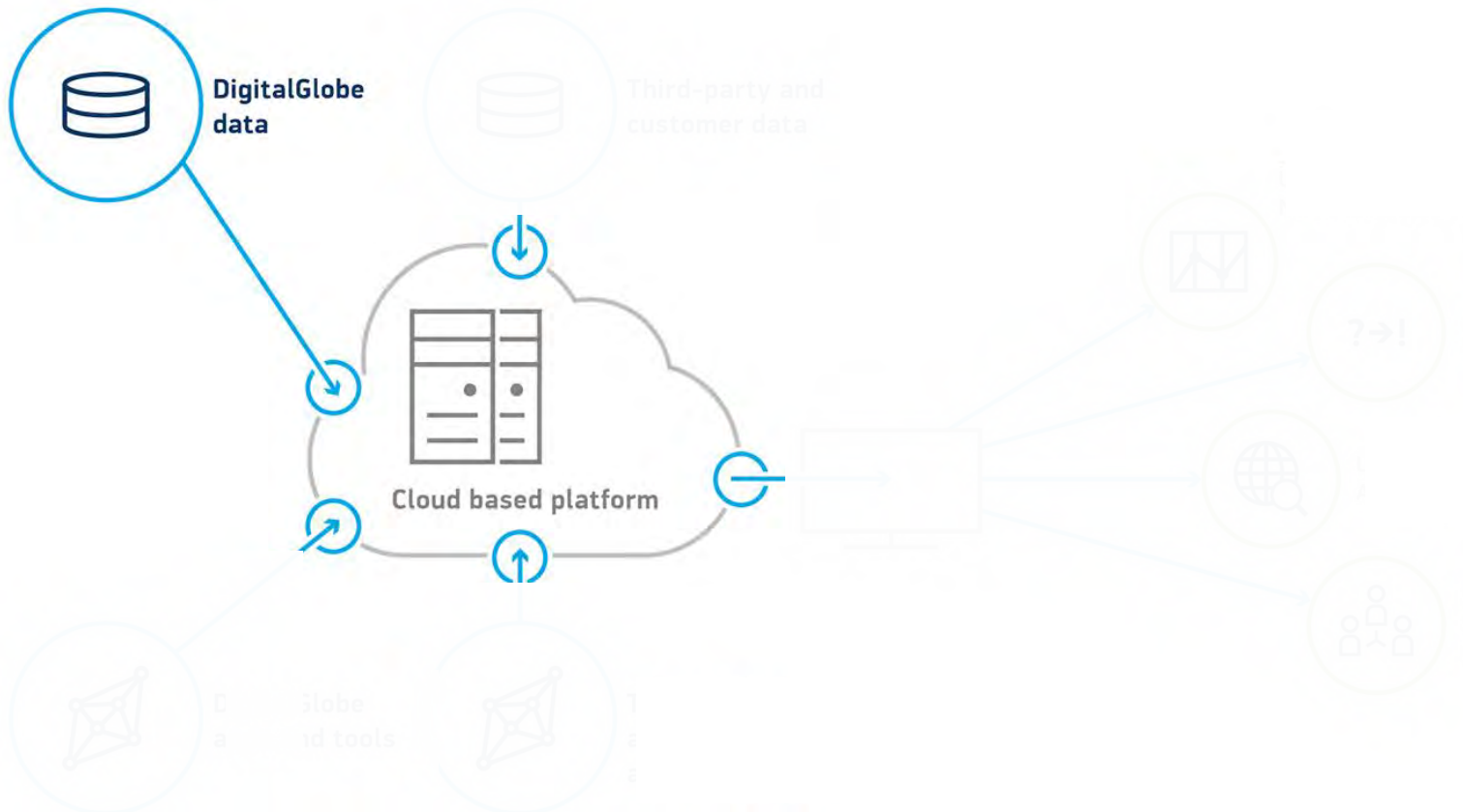


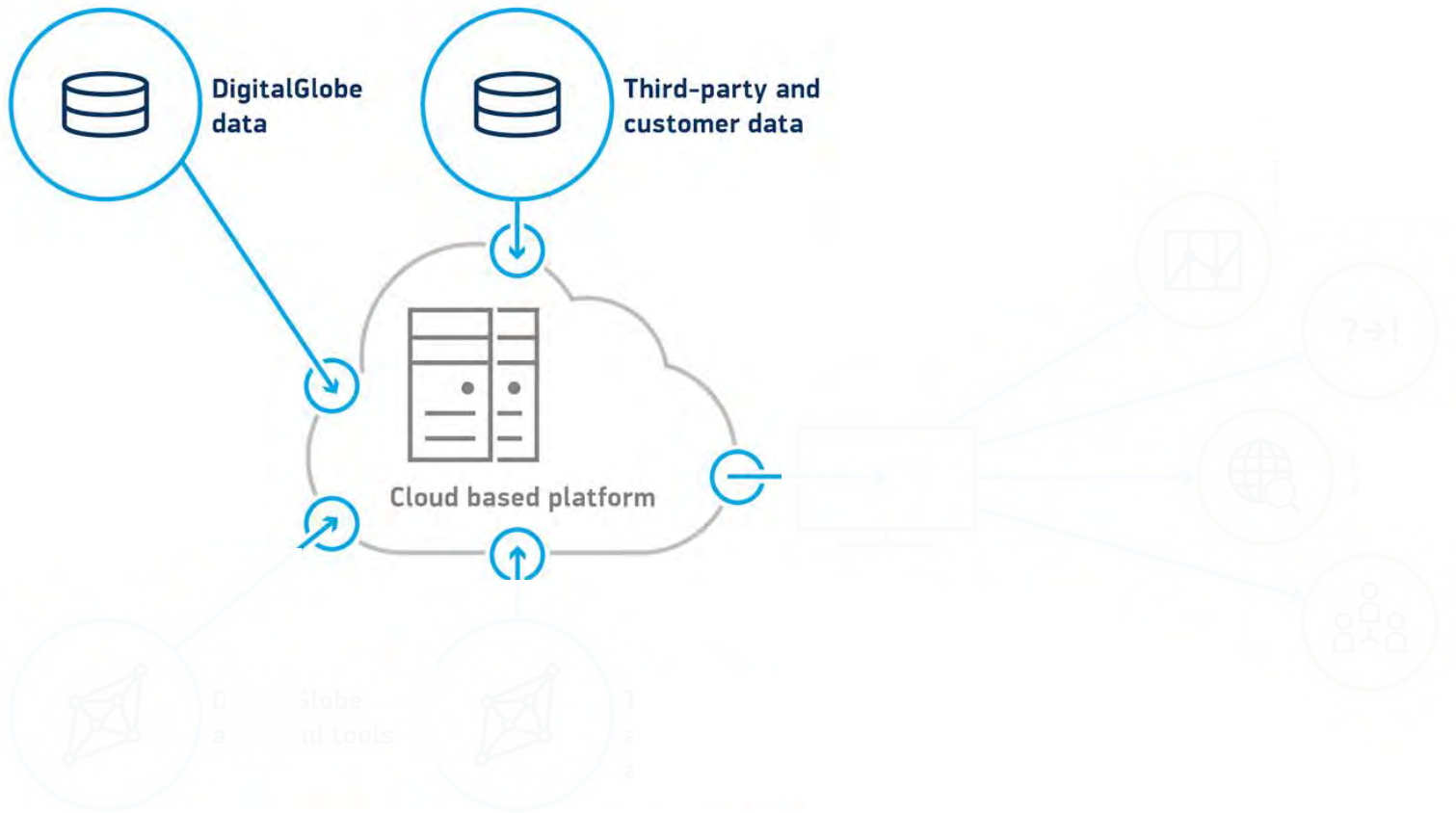


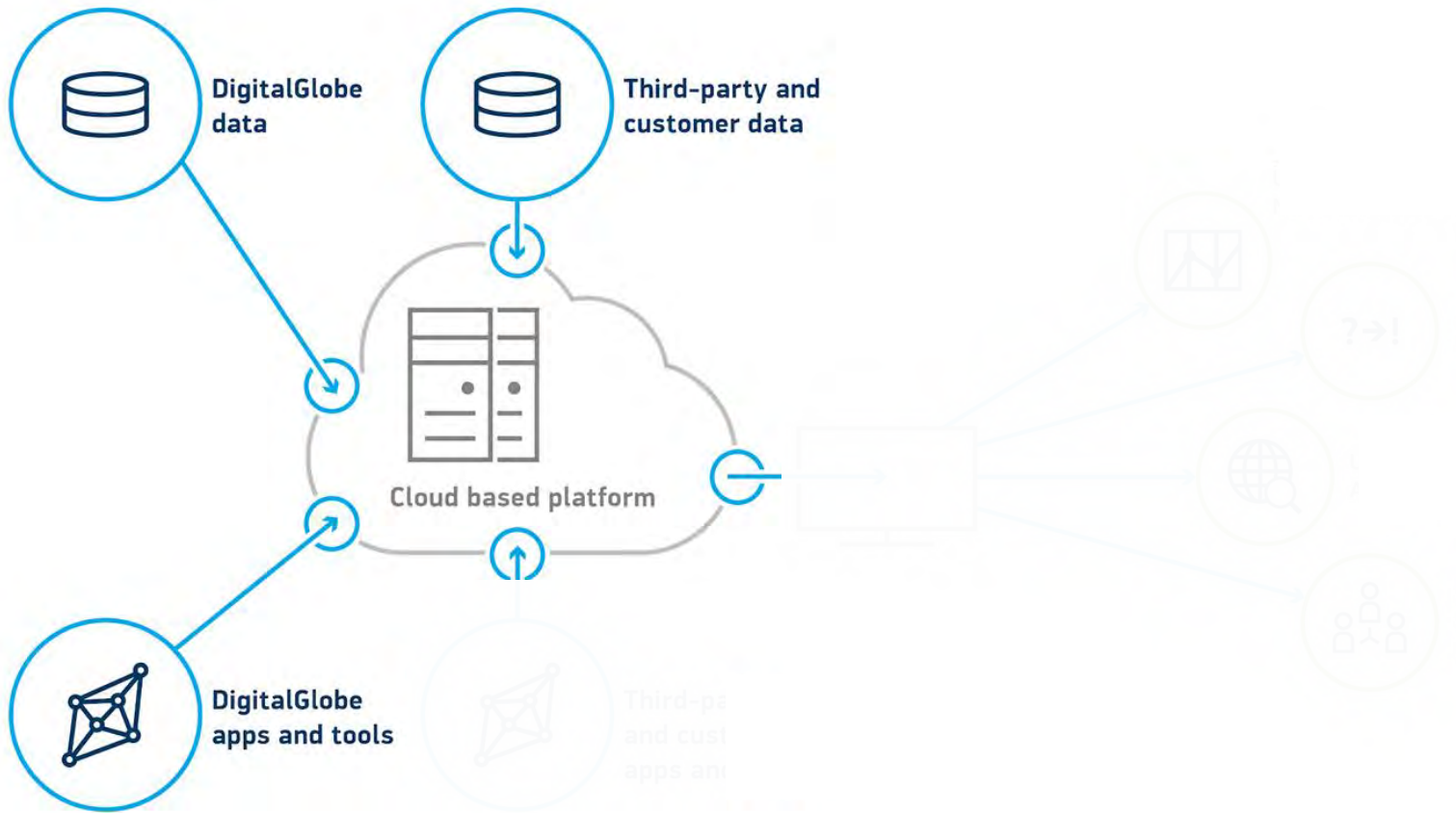
DigitalGlobe has made the investment to team up with Amazon to build a “super computer” in the cloud that can enable easy access to the entire archive, combined with a powerful computing capabilities

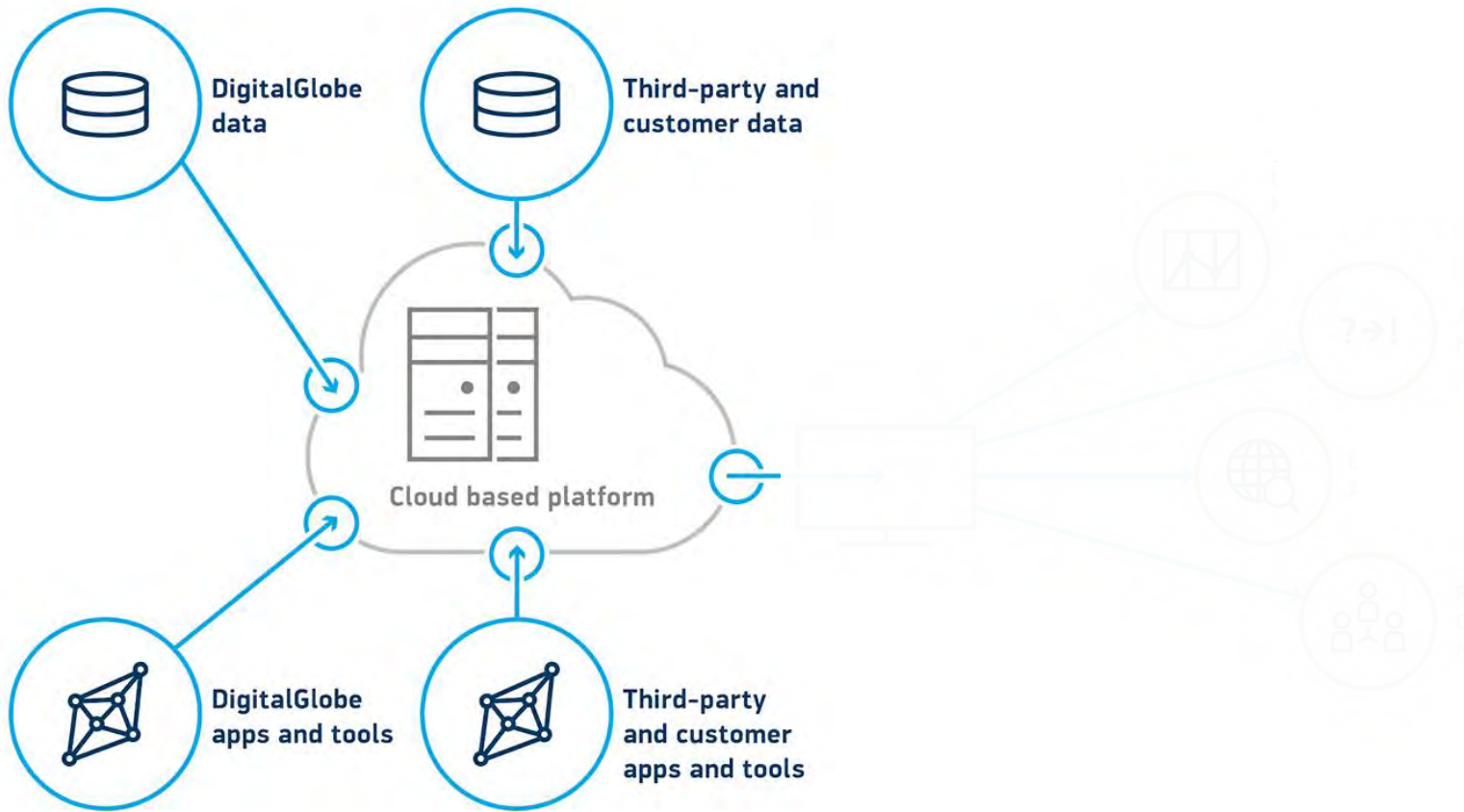


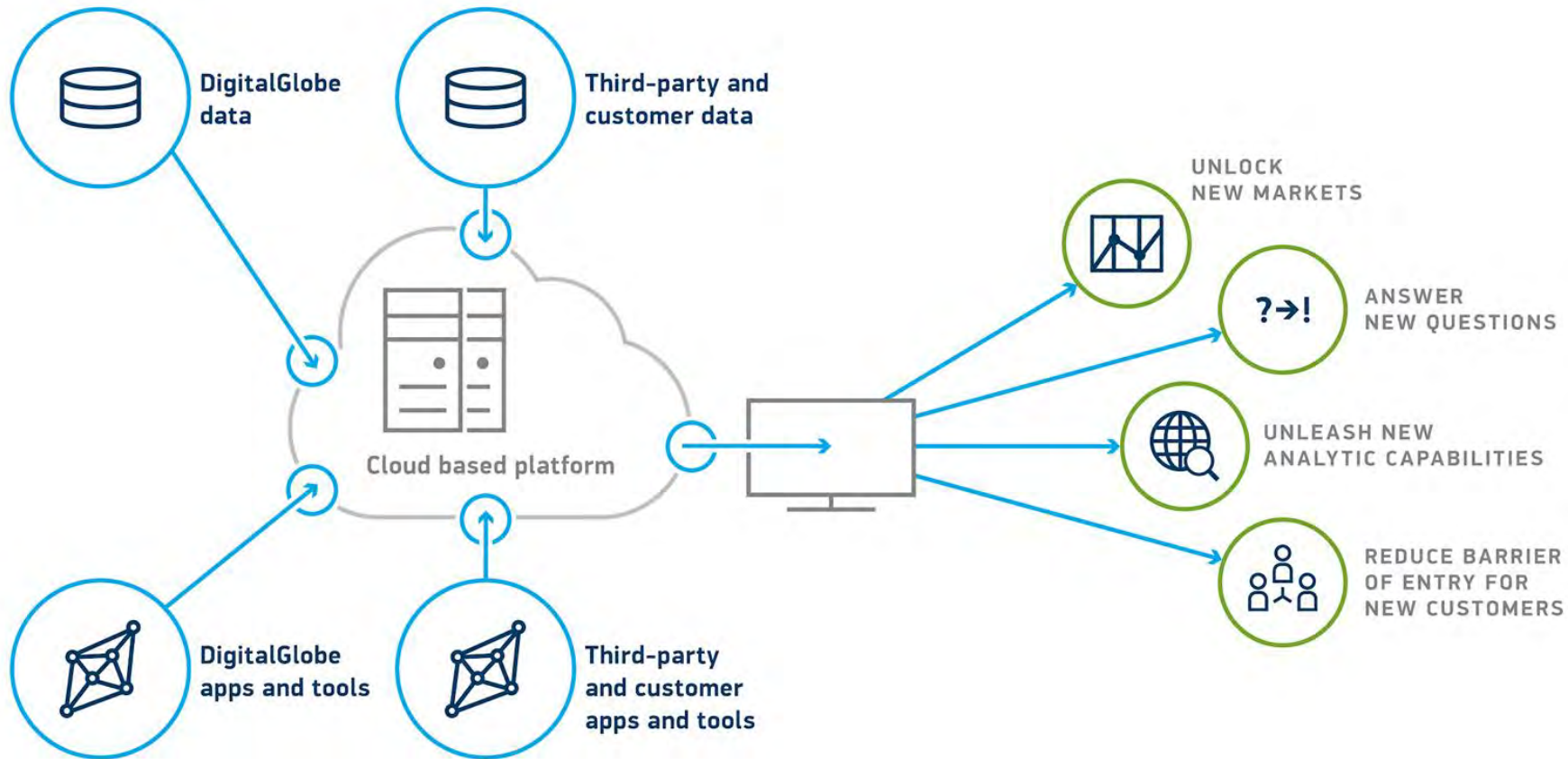












These are the important concepts that allow customers to conduct analysis at scale to delivery new and innovative solutions



Summary of Key Concepts

- Access to DigitalGlobe's entire archive, Landsat, Sentinel, Radarsat, and your own data (aerial, drone, vector).
- Ability to develop your own algorithm for internal use, or for sale to external users to build a revenue share model
- Ability to take advantage of already built algorithms to solve your business problems, or to build new markets
- Pricing is based on how much data you store, and how much computing power you use
- Imagery data is not delivered and licensed. The imagery is only rented out temporarily in the cloud while analysis is conducted, and only analysis results are delivered and licensed to GBDX users.



GBDX = Ecosystem

GBDX now consists of more than 40 different partners who offer unique advantages

GBDX has a thriving ecosystem



U.S. Government



INTELESCOPE

GBDX enables a broad range of use cases leveraging DigitalGlobe's ecosystem of partners





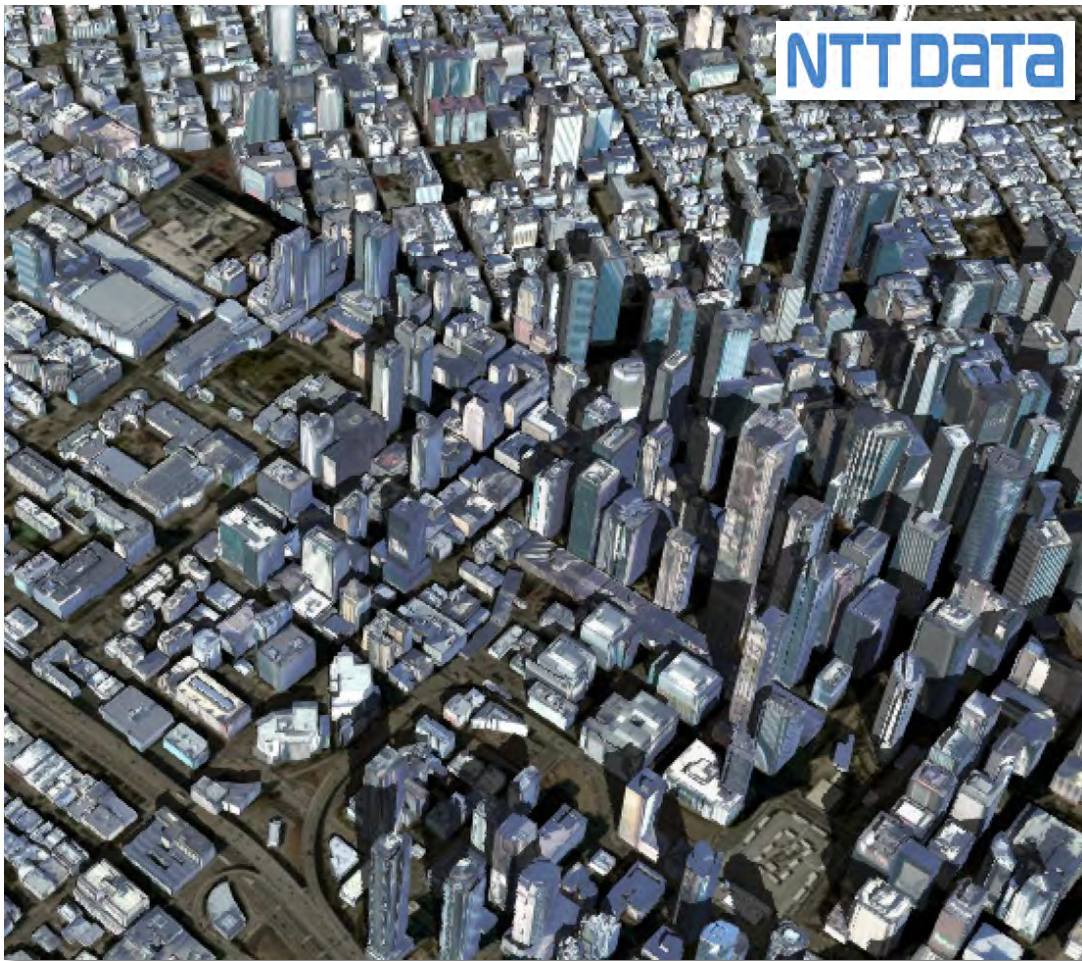
Information Products



building footprints

detection of features $> 3\text{m}^2$
1.25-1.5 million buildings per week





NTT DATA



3D information

rapid DSM and DEM production
height attribution



NTT DATA

VRICON



HARRIS



Scalable Processes

Aircraft Detection



DigitalGlobe capability

100% automated

Over 1M km² of airfields
processed



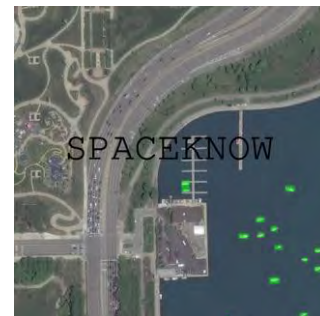
Ship Detection



Detection of maritime vessels

100% automated

Over 1M km² of ports
processed

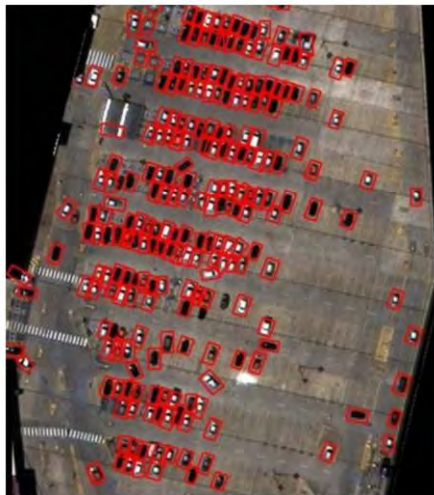


SPACE_KNOW

Car Detection



VIDEO *in*form
FOR A BRIGHT VISION



Dynamic object detection

100% automated

Challenges with HVAC units and shadowed streets

Projects performed on border areas, retail areas to estimate foot traffic for stores

Road Density/Probability Estimation

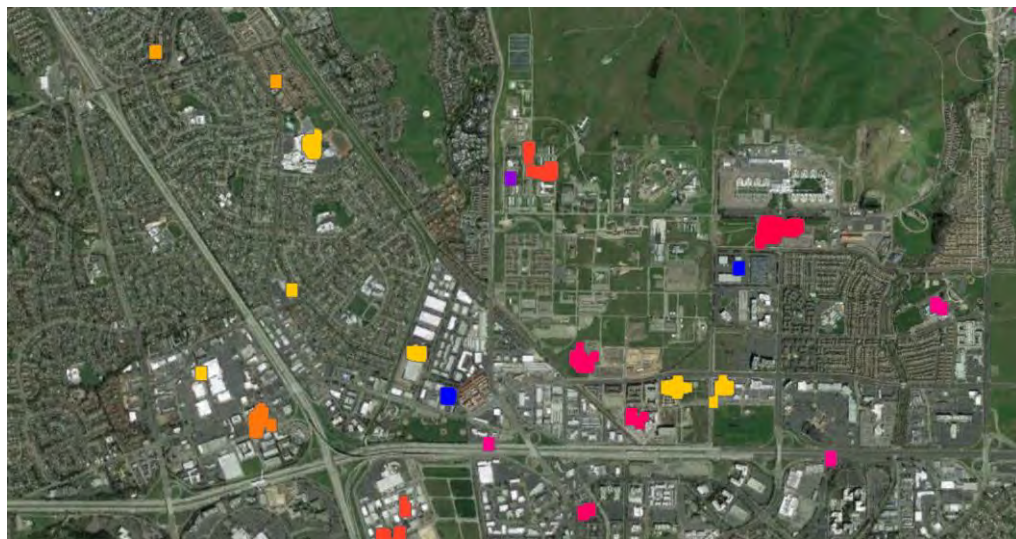


CrowdAI

- DigitalGlobe partner CrowdAI specializes in detection of roads from DigitalGlobe imagery
- 100% automated
- Accuracy metrics currently under development
- Detection of road features based on input target areas of interest
- Can scale to meet country scale needs – effort required in up front training of the system



City Scale Change Detection



Detection of change from
Radarsat-2 data

100% automated

Highly tailored to target
features of interest

Can scale to meet monitoring
efforts with a 24 day refresh

Coastline Detection and Extraction



Extraction of coastline polylines

Semi automated

No accuracy metrics developed to date

Recent project: 1TB of imagery collected over 7 years processed to create 1000 km of coastline in 1 week



GBDX

Two Ways to make an API Call



