

living planet symposium

BONN
23–27 May
2022

TAKING THE PULSE
OF OUR PLANET FROM SPACE



Planet's New Space Approach to Complement Sentinel Missions

Regina Kozyra, Planet Labs GmbH

Bonn, 26th of May 2022

You can't fix
what you can't see.





PLANET'S MISSION

To image the whole world every day,
making change **visible, accessible,
and actionable.**





PLANET CURRENT OFFER TO

Copernicus USERS



Streaming
Services



PlanetScope (VHR2)
Archive & Monitoring



VHR1 archive and
tasking with
intra-day revisit

The traditional approach is falling short



Limited
coverage



Low
revisit



Inefficient
access



Signal vs
noise

And consequences are profound



**Overspending
& budget loss**



**Security
risks**



**Ineffective
policies**



**Loss of citizen
trust**



A new approach

Planet provides geospatial data at the speed of change, equipping users with the data necessary for making informed, timely decisions.





New Space approach is key for solving global challenges and is proposed for Copernicus services



**DIGITAL
TRANSFORMATION**



**SUSTAINABILITY
TRANSFORMATION**

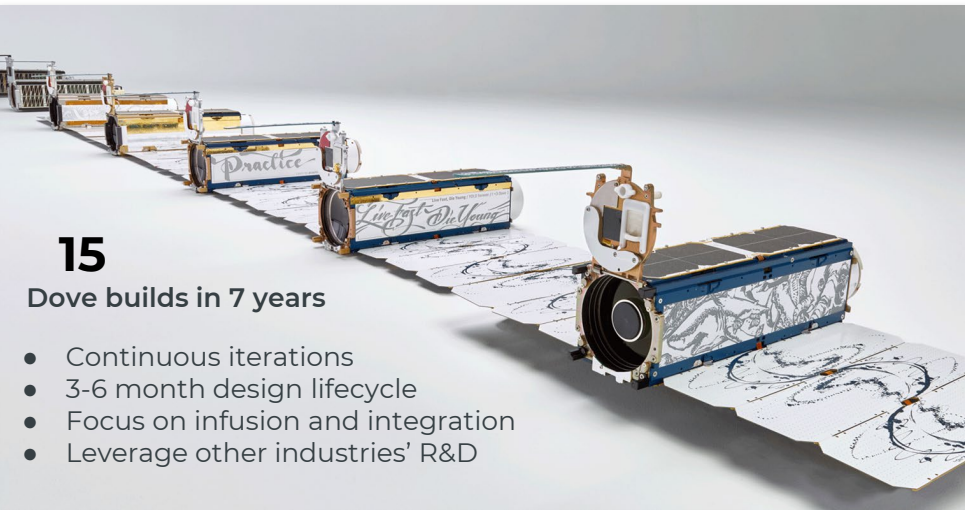


Making Use of Data
Economies of Scale

- Data-as-a service, subscriptions to defined areas with constant updates
- Flat rate partnerships (“all you can use”)



Agile Aerospace - from satellite design to data delivery

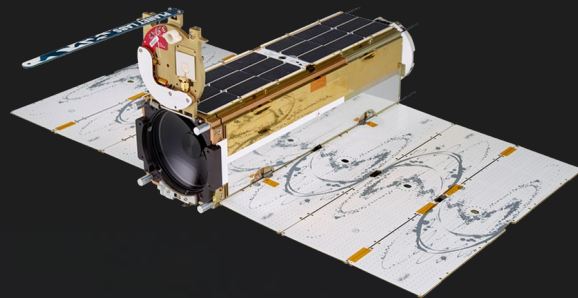


15

Dove builds in 7 years

- Continuous iterations
- 3-6 month design lifecycle
- Focus on infusion and integration
- Leverage other industries' R&D





(Super)Doves



SATELLITES
~200

GSD
3.7 m

CAPACITY
350 million km²/day

ORBIT ALTITUDE
475 km

SPECTRAL BANDS
RGB + Green II, Red
Edge, Yellow, Coastal
Blue, and NIR

An aerial photograph of a dry, cracked riverbed. A large, dark tree stump stands in the center of the cracked earth. The surrounding landscape is arid and brown. The text is overlaid on the image.

AN AVERAGE OF

1700

IMAGES FOR EVERY PLACE ON EARTH



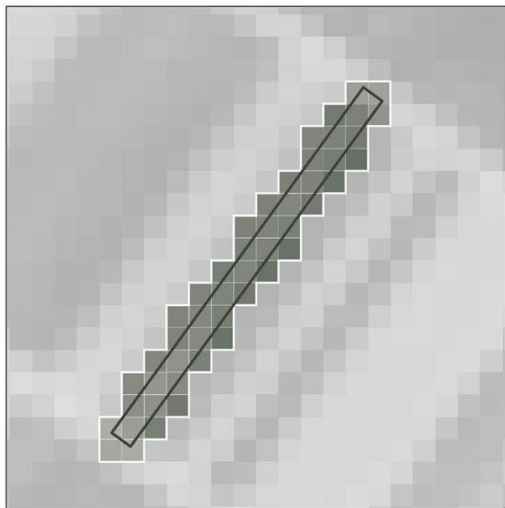
Complementary use of PlanetScope and Sentinel-2 data

AG Monitoring of Small and Narrow parcels

Sentinel-2 is the preferred data source for large area AG monitoring. Size and geometry pose a challenge for 10m Sentinel-2 resolution.

SENTINEL-2

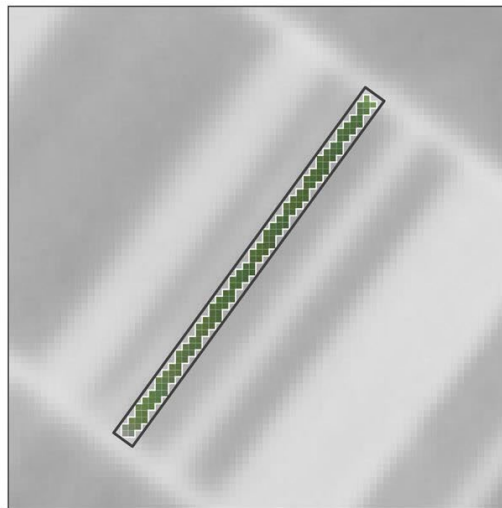
No pixels entirely within parcel



APRIL 22, 2021

PLANET FUSION

129 Pixels within parcel



APRIL 23, 2021

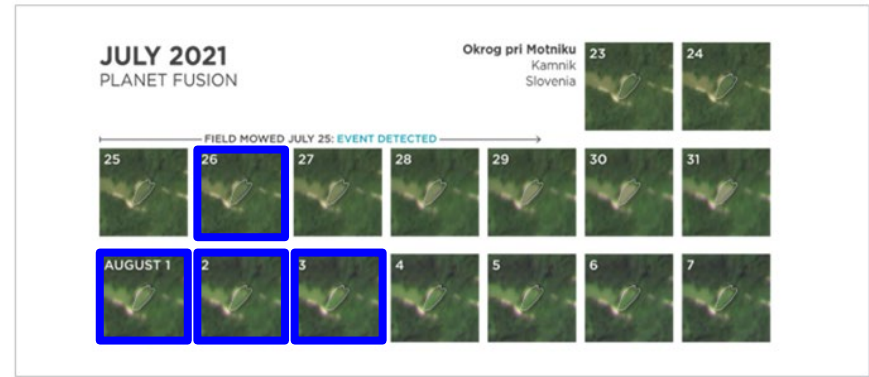
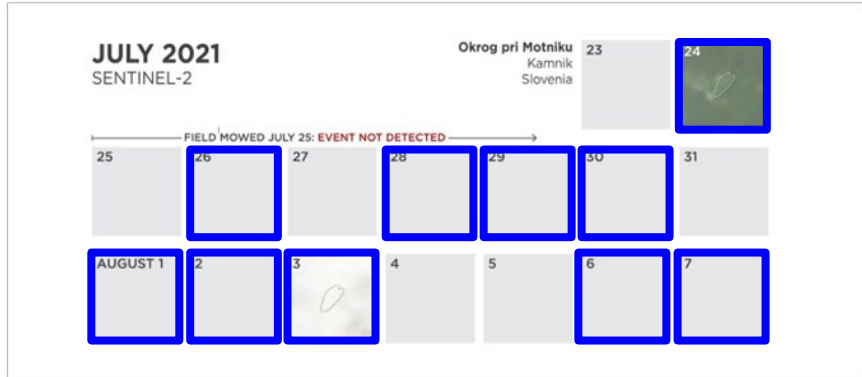





Complementary use of PlanetScope and Sentinel-2 data

AG Monitoring of relevant events

Sentinel-2 is the preferred data source for large area AG monitoring. Temporal resolution pose a challenge for bi-weekly Sentinel-2 cadence.

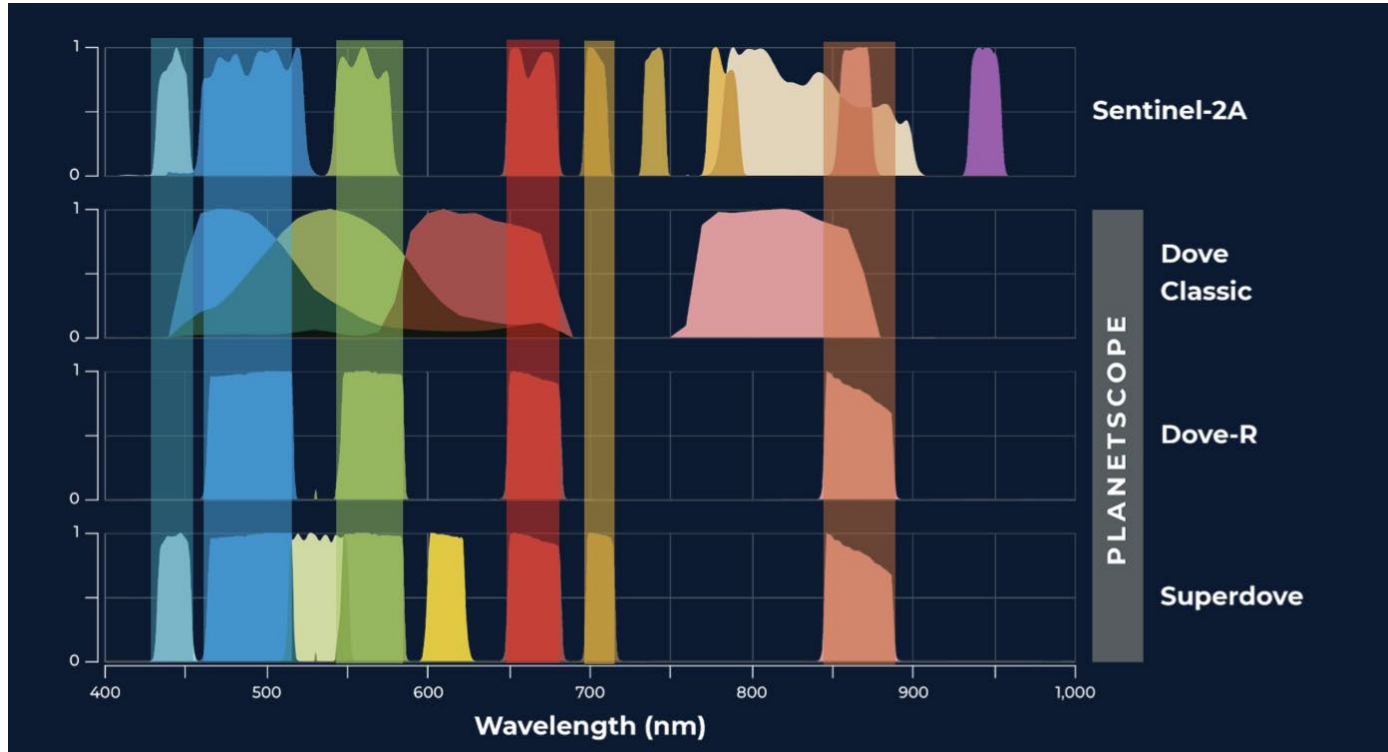


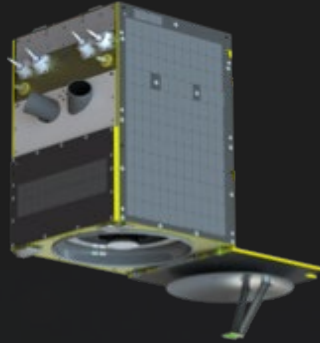
 PlanetScope source image available



Complementary use of PlanetScope and Sentinel-2 data

PlanetScope and Sentinel-2 data are spectrally compliant





SkySat



SATELLITES
21

GSD
0.65 m

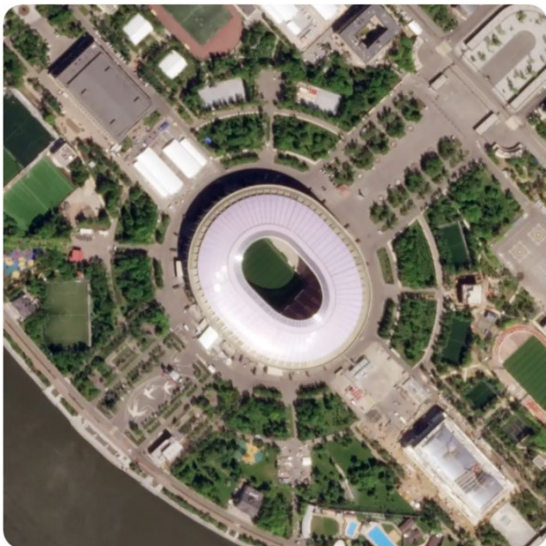
CAPACITY
600 K km²/day

ORBIT ALTITUDE
450 km

SPECTRAL BANDS
RGB, PAN and NIR



SkySat products available for Copernicus Services



Standard Collect

Point and strip up to 500 sq km



Video

Pan video up to 120 seconds



Stereo Collection

3D models and DEM construction
for volumetric analysis



High Revisit SkySat Tasking Example

Monday Sep 23, 2019

4 SkySat collects of the
Port of Abu Dhabi

SSC12	06:53 UTC
SSC1	07:32 UTC
SSC8	09:38 UTC
SSC9	09:50 UTC

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National Marine Dredging Company, A

2019/06/23 - 2019/09/23 Save search

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Daily Imagery

Cloud cover 0 - 100% Area coverage 0 - 100% Source 1 source All filters >

4-band PlanetScope Scene SkySat Scene

3-band PlanetScope Scene RapidEye Basic Scene


RapidEye Ortho Tile Sentinel-2 Tile

SkySat Collect Custom RapidEye Ortho Tile


PlanetScope Ortho Tile Landsat 8 Scene

14 > Sep 23, 2019 (4) > Deselect all Most recent v


Sep 23, 2019 09:50:51 UTC [Deselect group](#)

 Sep 23, 2019 09:50:51 UTC
SkySat Collect
20190923_095051_ssc9_u0001 [Info](#)


Sep 23, 2019 09:38:35 UTC [Deselect group](#)

 Sep 23, 2019 09:38:35 UTC
SkySat Collect
20190923_093835_ssc8_u0001 [Info](#)

Sep 23, 2019 07:32:38 UTC [Deselect group](#)

 Sep 23, 2019 07:32:38 UTC
SkySat Collect
20190923_073238_ssc1_u0001 [Info](#)

Sep 23, 2019 06:53:41 UTC [Deselect group](#)

 Sep 23, 2019 06:53:41 UTC
SkySat Collect
20190923_065341_ssc12_u0001 [Info](#)

API { : } Order items (4)



Port of Abu Dhabi
Today, Sep 23



06:53 UTC (10:53 local) SSC12

Port of Abu Dhabi
Today, Sep 23



07:32 UTC (11:32 local) SSC1

Port of Abu Dhabi
Today, Sep 23



09:38 UTC (13:38 local) SSC8

Port of Abu Dhabi
Today, Sep 23

09:50 UTC (13:50 local) SSC9



Coming next...





Meet Pelican - next-generation VHR satellite constellation for rapid revisit insights anywhere on the globe.

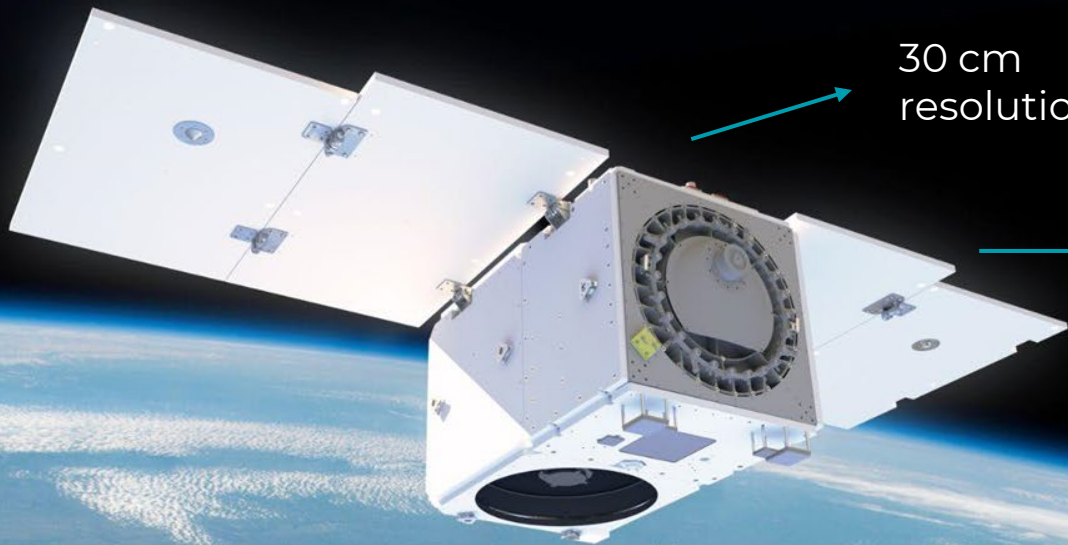
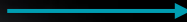
Acquisition
within 5 min
or less



30 cm
resolution

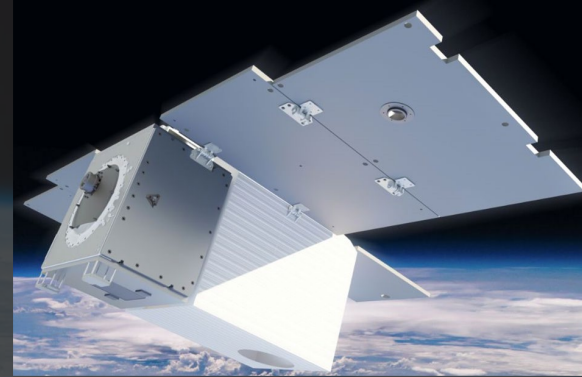
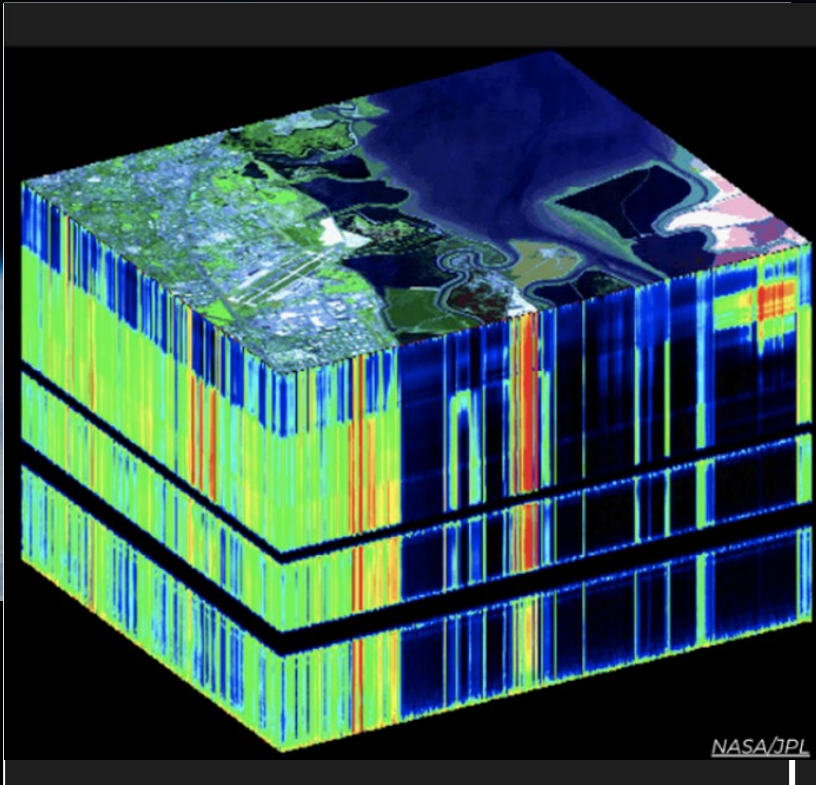


Up to 30
captures per
day



Meet Carbon Mapper

hyperspectral mission to detect carbon and methane emissions



Carbon Mapper

GSD
30 m

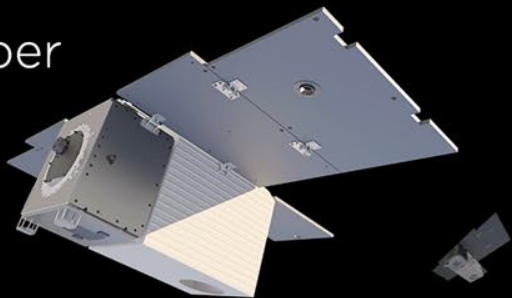
CAPACITY
93k - 315k km²/day/satellite

ORBIT ALTITUDE
400 km

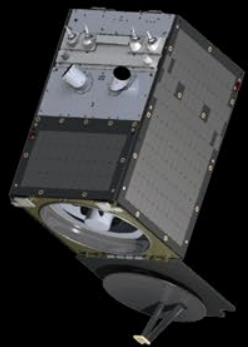
SPECTRAL BANDS
400-2500 nm @ 5 nm spacing



Carbon Mapper
HYPER SPECTRAL



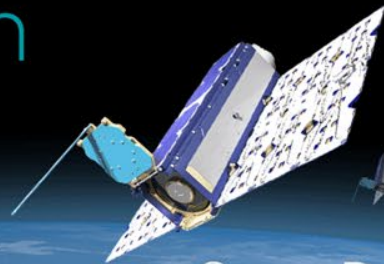
SkySat
50 CM TASKING



Planet's Virtual Constellation



Pelican
VERY HIGH-RESOLUTION
RAPID REVISIT



SuperDove
3-5 M MONITORING

Automated Mission Control

Planetary Scale
Processing Pipeline





Thank You.

Engage with Planet's Science Programs and apply here for Planet Data via ESA Earthnet
go.planet.com/lps22



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