Digital Earth AFRICA

Digital Earth Africa

Building on the demand for an operational Africa-wide open data cube

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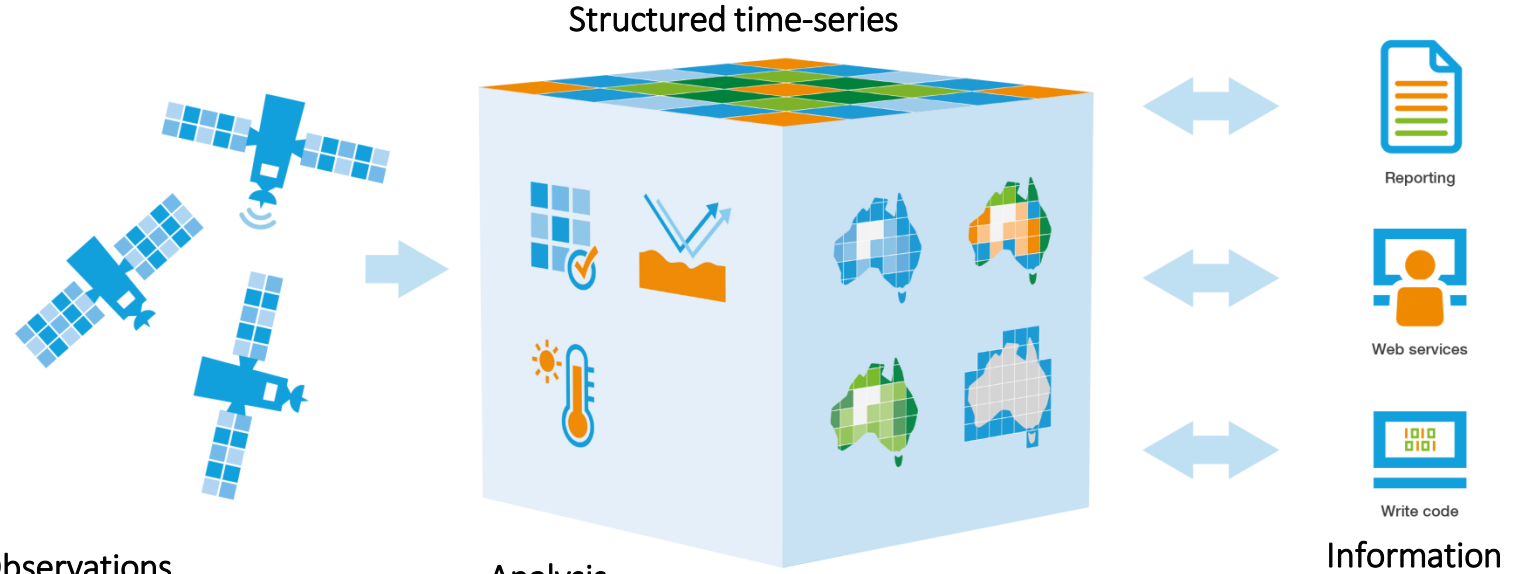
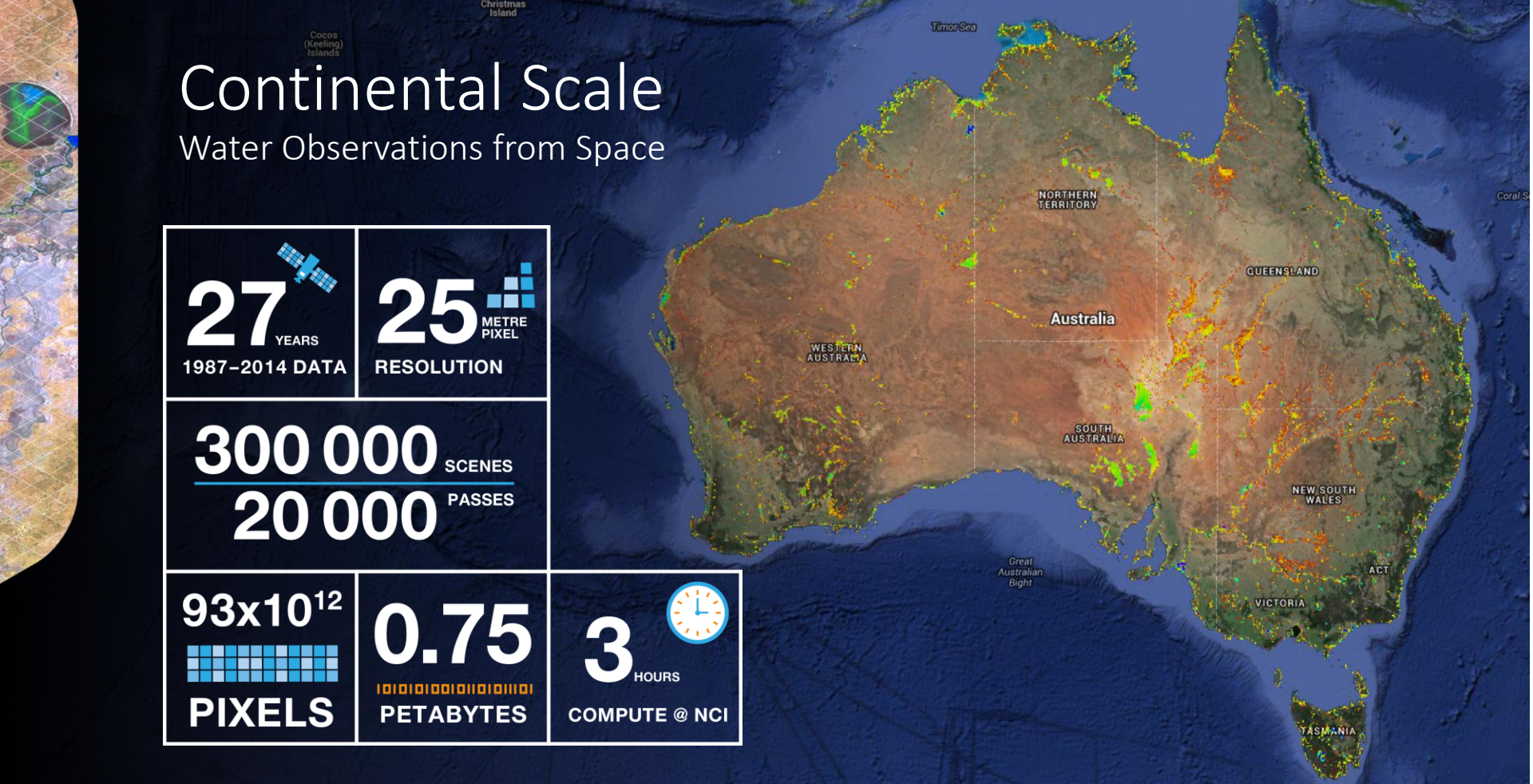
Digital Earth Australia



Continental Scale

Water Observations from Space



27 YEARS
1987–2014 DATA

25 METRE PIXEL
RESOLUTION

300 000 SCENES
20 000 PASSES

93x10^{12}
PIXELS

0.75
PETABYTES

3 HOURS
COMPUTE @ NCI

Problem Statement

Digital Earth AFRICA

Countries have expressed a need for better access and capacity for applying Earth observation data to national priorities, in relation to national development objectives, 2030 Agenda and Agenda 2063.

Digital Earth Africa will provide an operational data infrastructure deployable in the cloud or locally that gives the government control over its management. The project will support a multi-stakeholder and data ecosystem approach.

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Data Roadmaps for Sustainable Development

Support countries at national and sub-national levels to develop and implement **whole of government** and **multi-stakeholder** data roadmaps for harnessing the data revolution for sustainable development, with particular emphasis on the SDGs and local priorities articulated in national plans.

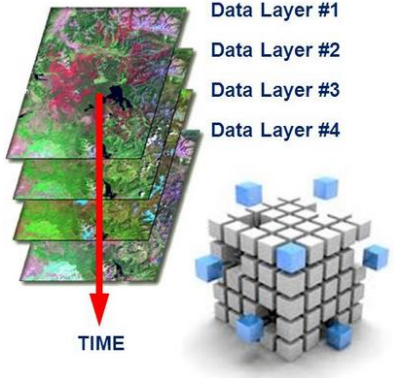
Veep opens forum on data collection

• For sustainable development

Africa Regional Data Cube

Digital Earth AFRICA

A data cube provides analytically ready data across decades allowing for easily accessible geospatial analysis on key environmental issues. The initial focus for the data cube will be on algorithms to address agriculture and food security and will be implemented for Sierra Leone, Ghana, Senegal, Kenya and Tanzania. Launched in May 2018 in Kenya.



Global Partnership for Sustainable Development Data

amazon web services

Strathmore UNIVERSITY

GEO GROUP ON EARTH OBSERVATIONS

CEOS Committee on Earth Observation Satellites

Australian Government Geoscience Australia

Australian Government Australian Centre for International Agricultural Research

Australian Aid

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Digital Earth AFRICA

"In the absence of data, it becomes difficult for us to effectively plan. The government has made a deliberate decision to leverage innovation and ICT to make data more available for better planning."

"With the launch of the Africa Regional Data Cube, we will begin to make the benefits of the data revolution more real and tangible to data communities who have often been left behind. This is a big step towards who we want to be in 2030."

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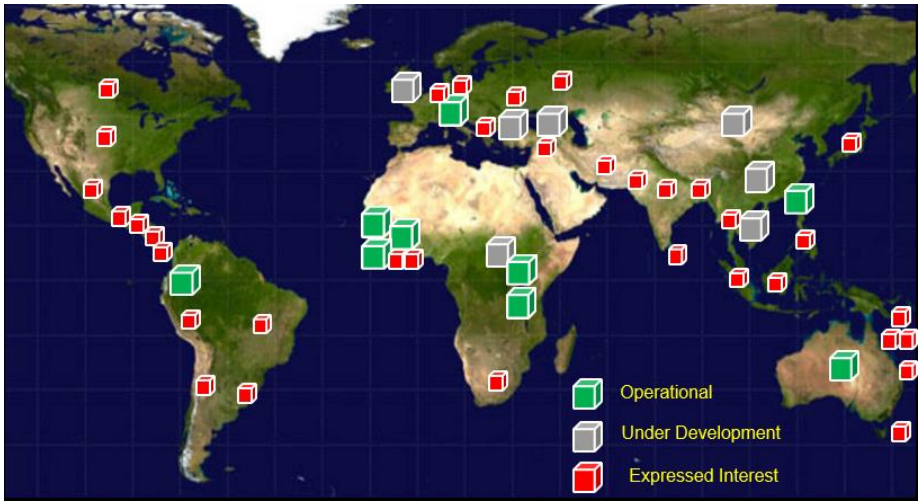


Africa

- Tanzania
- Kenya
- Senegal
- Sierra Leone
- Ghana
- Uganda
- Rwanda
- Botswana
- Cote d'Ivoire
- Malawi
- Gabon
- Ethiopia
- South Africa
- Togo
- Cameroon

Use Cases

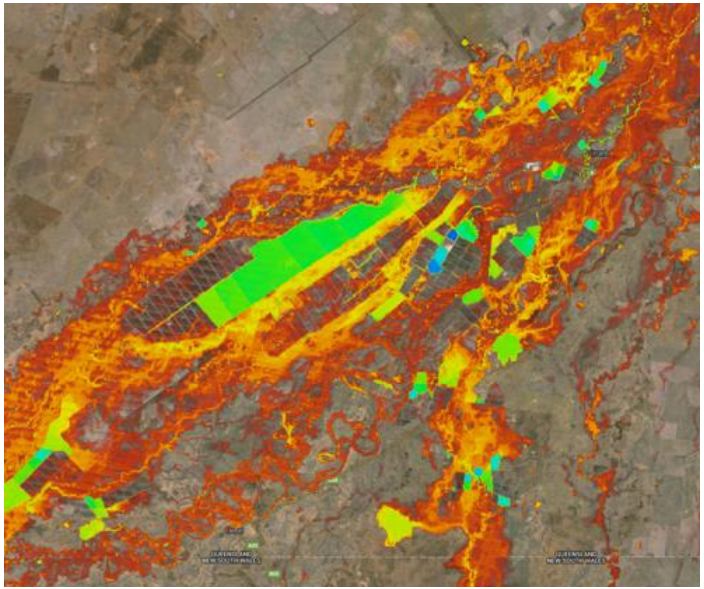
- Agriculture
- Land degradation
- Water quality and extent
- Disease/pests
- Deforestation
- Illegal mining
- Urban growth
- Flood risk
- Unplanned settlements
- Wildfires
- Mangroves
- Landslides
- SDG indicators

Project Objectives

Digital Earth AFRICA

Building off the experience with the Africa Regional Data Cube and other open data cube deployments globally, **this project proposes to develop an investment roadmap for Digital Earth Africa** by:

- Developing a coalition of partners and investors;
- Undertaking public communications including significant stakeholder engagement;
- Conducting a regional workshop in Africa;
- Conducting an international workshop at the GEO Plenary;
- Addressing the full business case, partners and investors, and budget including multi-year investment plan



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Operational Data Cube for all of Africa

Digital Earth AFRICA

- Operational Data Cube for whole of Africa
    - Regular decision ready product / not research
    - Automated, run for every pixel for entire continent
    - Levering off other ODC developments
- New institutional home- (Host TBD)~30 staff
- Flexible cloud/HPC Infrastructure
- Funded for production of product and capacity building/App development
- Multilateral effort, not owned by one country
- Interoperability allowing for connections with other platforms such as GEE, radiant.earth, Esri, etc. to share data, algorithms and functionality

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Outreach

- **June**
  - AfriGEOSS meting in Libreville
- **July**
  - GEO Secretariat, Geneva
- **September**
  - Africa visit, South Africa, Addis, Kenya
  - UN General Assembly, World Economic Forum, New York
- **October**
  - UN-GGIM Africa, Addis
  - UN World Data Forum, Dubai
  - Eye on Earth, Dubai
  - GEO Week, Kyoto
- **December**
  - NEPAD, South Africa
  - DCLI, dLab – Tanzania
  - UNECA , Ethiopia
  - UN-GGIM Seminar, Nairobi

Organizations Met With:

- SANSA
- CSIR
- DIRISA
- NEPAD
- UNECA
- AUC
- GPSDD
- RCMRD
- Kenya NSA
- Kenya ODP
- Strathmore University
- UNOPS
- UNEP
- UNFPA
- FAO
- SERVIR

Phase I Steering Committee

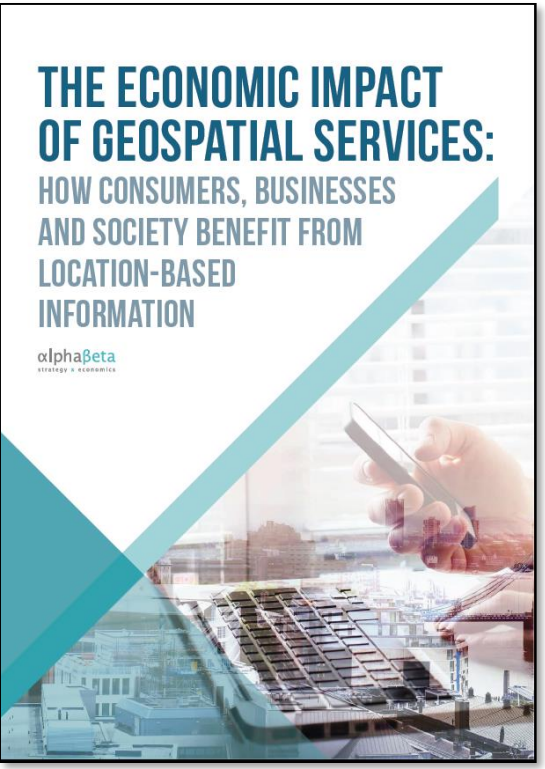
Digital Earth AFRICA

- Australia
- South Africa
- Ghana
- Kenya
- GEO
- CEOS
- GPSDD
- World Economic Forum

- Business Plan
  - Institutional arrangements
  - Political buy-in
  - Technical infrastructure
  - Capacity building
  - Long-term sustainability
  - Financial models
  - Connecting to other initiatives and solutions

- Alignment
  - GMES for Africa
  - AfriGEOSS
  - UNGGIM
  - SDGs
  - Agenda 2063
  - GRID3
  - Other platforms (radiant.earth, Africa GeoPortal, Google Earth Engine, value added services and products)

Potential for Economic Growth



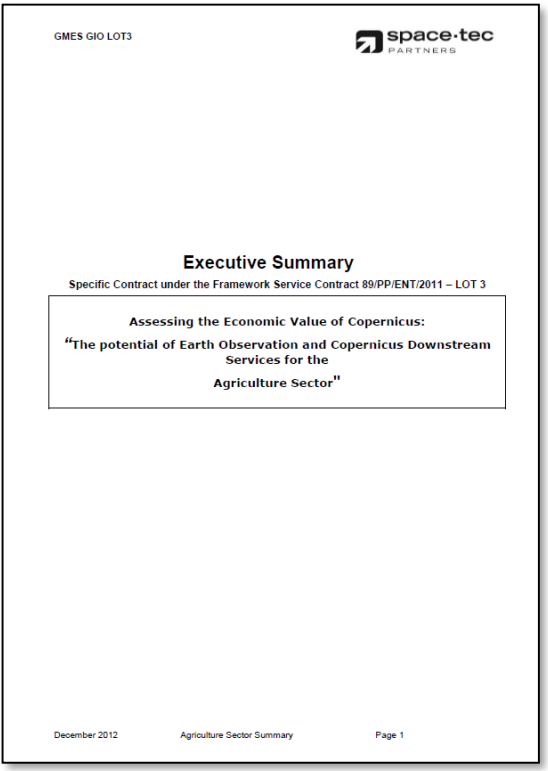
Geospatial services industry generated revenue of approximately

US$400 BILLION IN 2016.

Geospatial services could have a significant productivity impact in sectors representing approximately

75% OF GLOBAL GDP.

Enabling Factors


GMES GIO LOT3

space·tec PARTNERS

Executive Summary

Specific Contract under the Framework Service Contract 89/PP/ENT/2011 – LOT 3

Assessing the Economic Value of Copernicus:

"The potential of Earth Observation and Copernicus Downstream Services for the

Agriculture Sector"

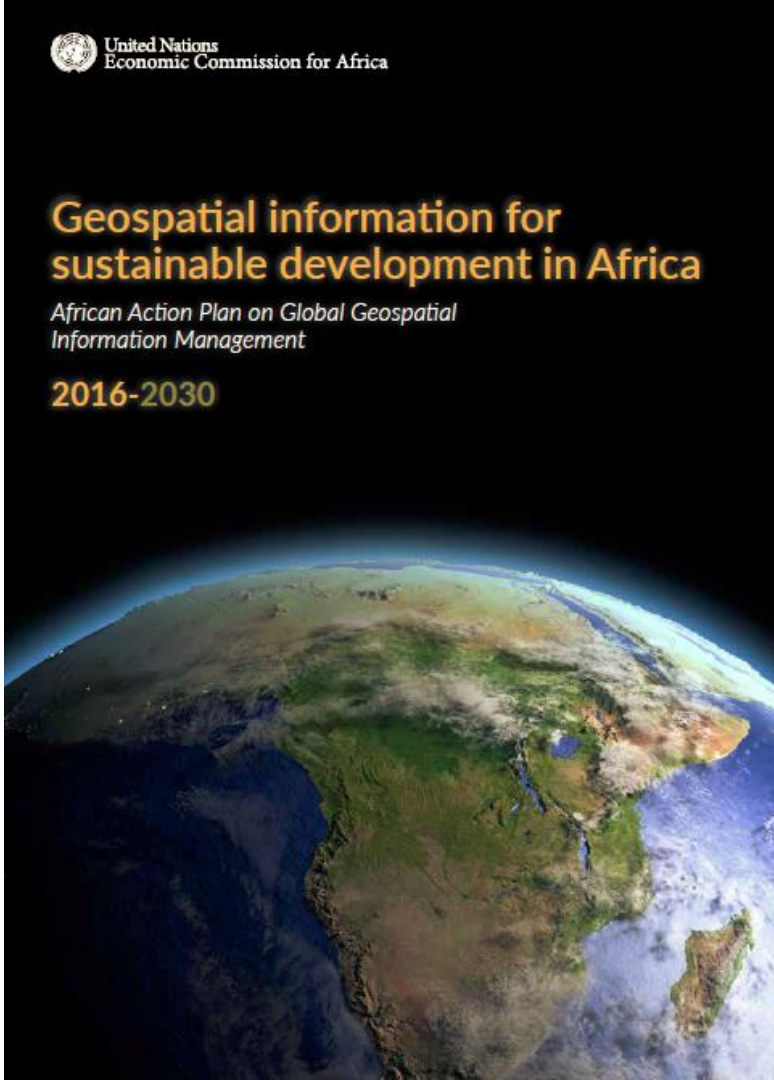
December 2012 Agriculture Sector Summary Page 1

1. Regulation: Free and open data policy; assurance of data continuity; quality assurance and standards-building.

1. Data Availability and Access: Simplified access to Analysis Ready Data

1. Demand/Market: Continued dissemination efforts and regional/local demand incubation and communication schemes aimed at commercial users.

- Often at the national level, there is much fragmentation on geospatial projects and related data.
- How to best make use of this data across sectors.
- Spatial Data Infrastructure and National Geospatial Strategies



What Have We Learned?

Digital Earth AFRICA

- Broad support for DE Africa
- A partnership approach likely needed with continental wide organizations and those with regional capacity building mandates, e.g. UNECA, NEPAD, RCMRD, AGRHYMET, CSE
- Stakeholders see DEAfrica as an opportunity to bring together many of the fragmented geospatial and EO data initiatives across Africa.
- Need to address sustainability of financing and capacity building in the long-term (20-30 years)
- Consider developing a hybrid, federated approach for the technical infrastructure inclusive of the cloud, super-computing and local installations.
- Capacity building is going to be critical – a good proportion of the overall budget should be dedicated to ensuring capacity for individuals, institutions and infrastructure.
- Likely moving towards an announcement for launching the program in March-April 2019.

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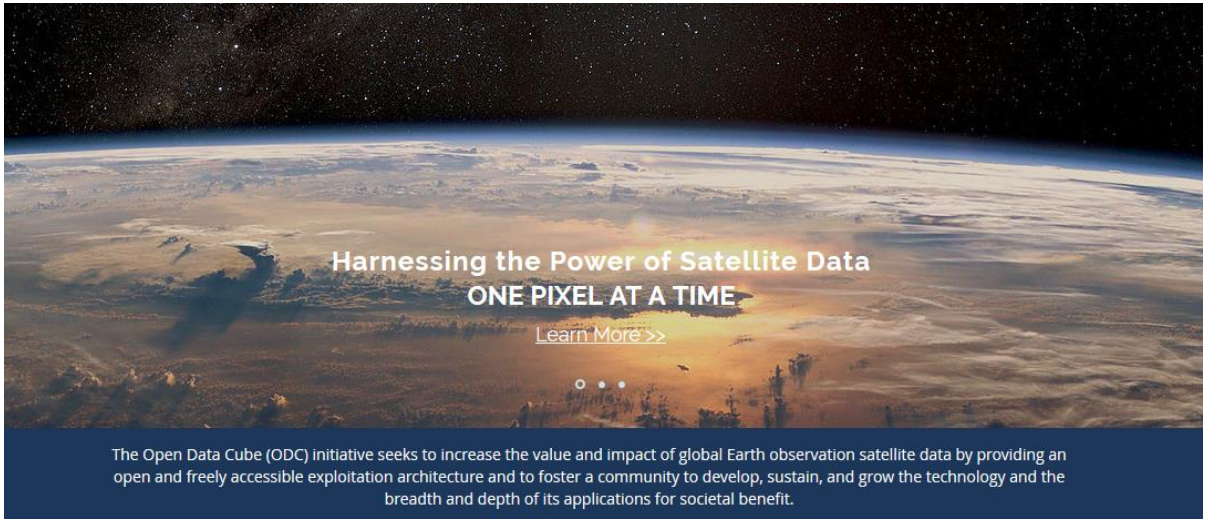

The Open Data Cube (ODC) initiative seeks to increase the value and impact of global Earth observation satellite data by providing an open and freely accessible exploitation architecture and to foster a community to develop, sustain, and grow the technology and the breadth and depth of its applications for societal benefit.

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