



Earth Observation  
Australia

# Earth Observation Australia: Operational phase 2017-2020

# Australia's Earth Observation Community Plan 2026 2018 Activities



400+ members

All national + state agencies

4 Industry Groups

AU\$5.3 billion annual activity<sup>1</sup>.



## Outcomes:

- Implementation Plan – 2017-
- Earth Observation Australia
- National EO Infrastructure
- Basis for Space Agency



Working Groups now addressing:  
5 priorities of the Plan



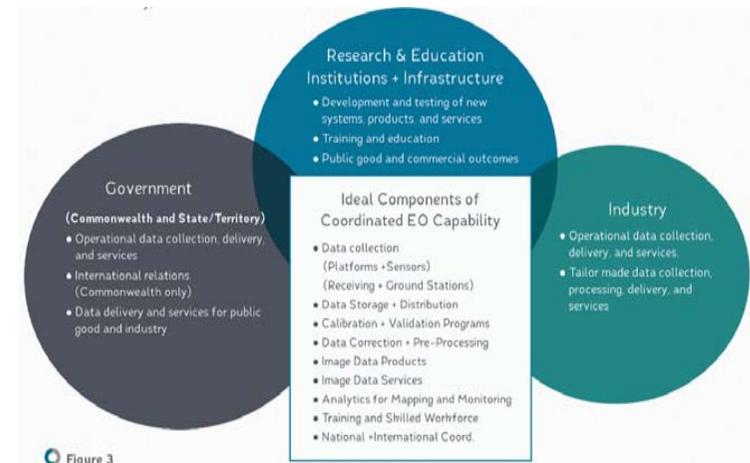
Continued National Coordination  
Priorities + Actions



1. ACIL Allen Consulting (2015) 'The Value of Earth Observations from Space to Australia: Report to the CRC for Spatial Information'

## • Vision for Australian Earth Observation 2026

- By 2026, the Australian Earth Observation sector will develop and deliver high-quality EO information, infrastructure, and services that are used widely by government, industry, research and the community in Australia and internationally.



- **The Plan** delivers a unifying focus to motivate and guide the Australian Earth Observation community to take a coordinated set of actions that will advance Australia's Earth Observation capability, while growing innovative partnerships across government, industry, and research and education to ensure Australia's economy, governments, society and environments can be sustained and improved.

## Australian Earth Observation Community Plan 2026

*Delivering essential information and services for  
Australia's future.*



1. **Connection and Coordination** — establishing a consistent vision within the Australian EO community, and delivering processes for internal coordination to ensure effective collaboration, resource use, and advocacy for EO in Australia and internationally.



2. **Securing Australia's Role in the International EO Community** — Australia must be an essential component of the international EO capability, delivering benefits to the international community and securing our access to and involvement in international EO programmes.



3. **Infrastructure and People** — developing, supporting and sustaining a wealth of trained professionals and quality infrastructure to enable world-leading EO research, innovation and application development.



4. **Access to EO Data and Services** — ensuring all Australian EO producers and users can easily and reliably access the data and services they need.



5. **Generating Value** — strengthening end-user engagement to enable delivery of high quality EO products and services suited to user needs, and supporting commercial development of EO applications.

- Need to resolve multiple: Data, Code Store, Processing and Delivery Environments

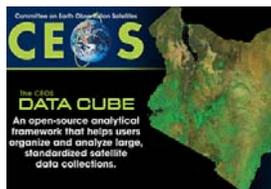
### Public - Research



### Private Industry



### Public Software Code Store



### Commercial Software



### Data Portal-Store



# • Infrastructure.....

**Digital Earth AUSTRALIA**

About Products

## About

Digital Earth Australia (DEA) provides an integrated data analysis platform, delivering a unique capability to present, process, and interrogate Earth observation satellite data.

This map (currently in BETA) showcases some of the existing DEA products and analysis:

- [Water Observations from Space \(WoFS\)](#)
- [Intertidal Extents Model \(ITEM\)](#)
- [Fractional Cover](#)
- [Dynamic Land Cover Dataset](#)

The volume of geoscience data continues to grow, offering great potential to improve the understanding of our physical environment. As a result, and like most new and innovative technologies, DEA continues to develop at the same time it is in use; influencing how the world looks at and uses Earth observation satellite data.

DEA is developed and maintained by Geoscience Australia and builds on the globally recognised innovation, the Australian Geoscience Data Cube; winner of the 2016 Geospatial Platform of the Year award.

CC BY Copyright Disclaimer Privacy

Australian Government  
Geoscience Australia

Digital Earth AUSTRALIA

# Program Roadmap

May 2018

## Contents

1 Introduction .....	4
1.1 Background .....	4
1.2 Looking Ahead .....	5
1.3 Purpose .....	6
2 Projects .....	7
2.1 Project Partners .....	7
2.2 Interdepartmental Committee .....	7
2.3 Project Documentation .....	7
2.4 Project Scale .....	8
3 Land Cover and Land Use .....	9
3.1 Current Projects .....	10
3.1.1 UN Land Cover Classification System Feasibility Study .....	10
3.1.2 Forest Cover .....	10
3.1.3 Dynamic Land Cover Dataset .....	10
3.1.4 Fractional Cover .....	10
3.1.5 Review of Current Crop Mapping Approaches .....	11
3.1.6 Irrigated vs Non-irrigated Crop Extents .....	11
3.1.7 Water Quality Monitoring for Sustainable Development Goals .....	12
3.2 On the Horizon .....	12
4 Marine and Coastal .....	13
4.1 Current Projects .....	14
4.1.1 National Mangrove Mapping .....	14
4.1.2 Shallow Water Habitat Mapping .....	14
4.2 On the Horizon .....	15
5 Change Detection .....	16
5.1 Current Projects .....	16
5.1.1 Change Detection for CER Land Projects .....	16
5.1.2 New Approaches to Statistical Analyses of Time Series Data .....	17
5.1.3 Burn Extents .....	17
5.2 On the Horizon .....	17
6 Analysis Ready Data .....	18
6.1 Current Projects .....	18
6.1.1 Sentinel-2 Surface Reflectance .....	18
6.1.2 Landsat ARD Inter-comparison and Sensitivity Analysis .....	18
6.1.3 Landsat Surface Brightness Temperature .....	19
6.1.4 Surface Reflectance Validation .....	19
6.1.5 Aquatic Surface Reflectance .....	19
6.1.6 Observation Density Quality Assessment .....	20
6.1.7 Improving the Location Accuracy of Synthetic Aperture Radar .....	20
6.2 On the Horizon .....	20
7 Platform Improvement .....	21
7.1 Current Projects .....	21
7.1.1 Automation and Orchestration .....	21
7.1.2 Cloud Storage Drivers .....	21
7.1.3 Scalability and Performance .....	22

## • National Collaborative Research Infrastructure and EO

### Australian Earth Observation Research Infrastructure AEORI

#### Coordination Office

Function: Development, Leadership and Management

Form: Host organisation, Director, Business Manager, Finance, Legal, Communication

#### NCRIS facilities built on:

- TERN
- IMOS
- AuSCOPE
- PlantPhenomics
- Others as req'd
- NEPS
- AITC -Mt Stromlo
- NCI/ANDS

#### Calibration + Validation Platform

**Function:** Expand existing infrastructure to build national calibration and validation capability

**Node 1-** Instrumentation + Networks

**Node 2-** Calibration

**Node 3 -** Validation

#### Experimental to Operating Platform

**Function:** Enable development of new EO applications by government, industry and research

**Node 1-** EO Testbeds

**Node 2 –** New Sensors and Platforms

**Node 3-** EO Research to Operational Infrastructure

#### Operational EO Infrastructure linked to:

- Geoscience Australia
- Bureau of Meteorology
- Defence
- Foreign Space Agencies
- Australian Private Industry
- International Private Industry



## Earth Observation for Government Network

### Navigation:

- [Home](#)
- [Aims & Objectives](#)
- [Workshops](#)
- [How to participate?](#)
- [Steering Committee](#)
- [Contact us](#)

The Earth Observation for Government Network (EOGN) is an administrative framework for the collection of advice and information on Commonwealth government applications of Earth Observations. This framework will provide information for use by Commonwealth, state/territory and local governments in Australia, and be shared with the broader Earth Observations from Space (EOS) community.

EOGN will address a critical function outlined in the Australian EO Community's 10 year plan to more effectively link and coordinate Australian Government agencies to key state/territory agencies and EO industry and research sectors.







Thanks for your input and attention!

[www.eoa.org.au](http://www.eoa.org.au)

# Australia's Earth Observation Community Plan 2026



145 individuals

All national + state agencies

4 Industry Groups

AU\$5.3 billion annual activity<sup>1</sup>.



5 key questions



108 specific projects

5 National Coordination

Priorities + Actions



## Outputs:



## Outcomes:

Implementation Plan – 2017-  
Earth Observation Australia



1. ACIL Allen Consulting (2015) 'The Value of Earth Observations from Space to Australia: Report to the CRC for Spatial Information