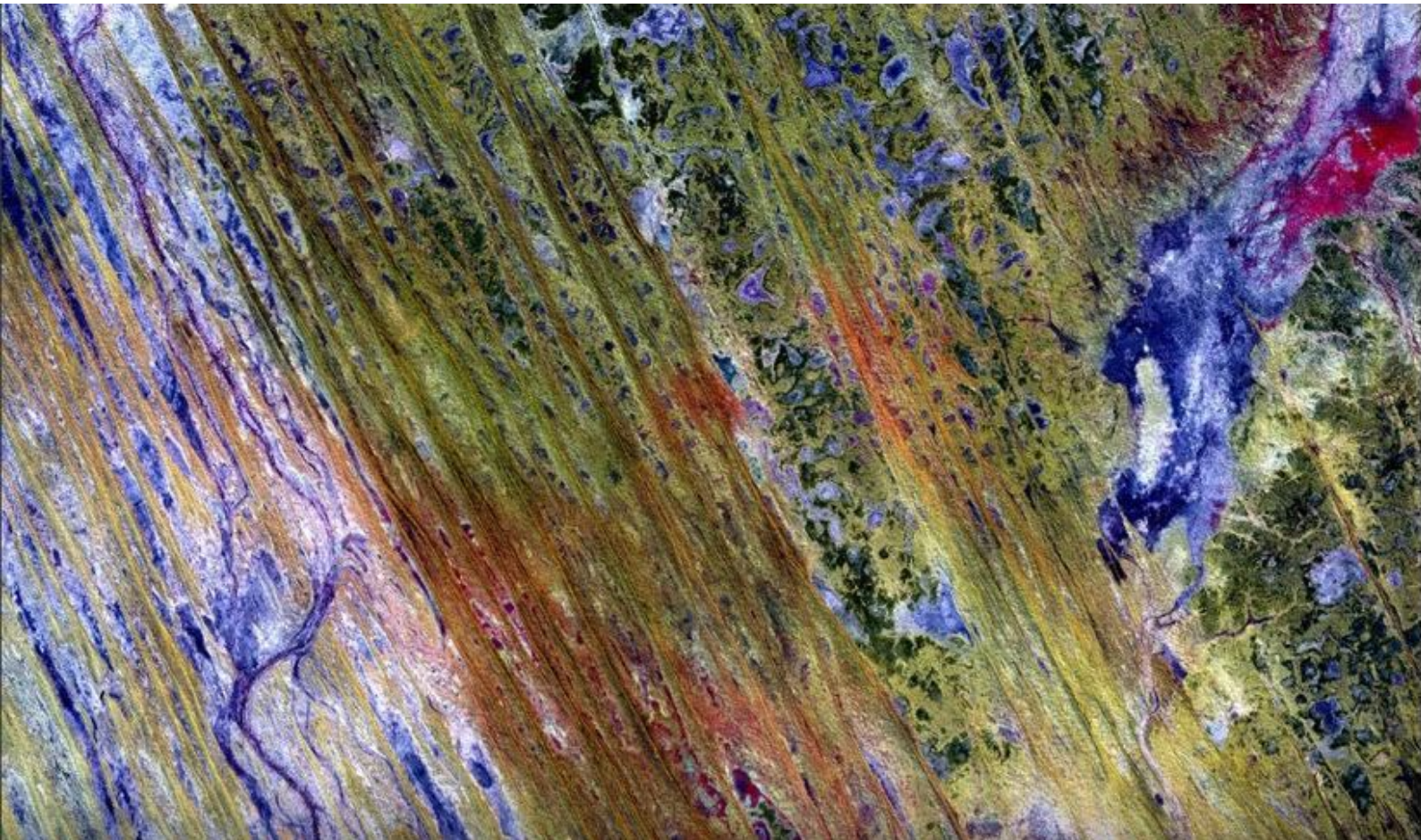


# 2020/21 Annual Report



Sentinel-2B surface-reflectance image of the intersection of the Channel Country and Simpson Strzelecki Dunefields bioregions. Near infrared, visible red and visible green are displayed in RGB. The image was supplied by the [European Space Agency](https://www.esa.int) and processed by the Queensland Government's Remote Sensing Centre.

## EXECUTIVE SUMMARY

### About EOA

Earth Observation Australia Inc. (EOA) is a not-for-profit organisation whose members are individuals with an interest in Earth observation (EO).

EOA is guided by five priority actions - Connection and Coordination, Securing Australia's Role in the International Earth Observation Community, Infrastructure and People, Access to Earth Observation Data and Services, and Generating Value – which were defined in the [Australian Earth Observation Community Plan 2026](#) (the Plan). That Plan is now directly linked to the Australian Space Agency's Civil Space Priority Roadmap for Earth observation.

### Governance and Membership

During the 2020/21 financial year, EOA was governed by an Executive Management Team of four, holding the positions of President, Vice President, Secretary, and Treasurer. The Non-Executive Management Team comprised eight members. All members of the Management Committee, excluding the President, were voted in at the 2020/21 elections, held in September 2020. Professor Stuart Phinn continued his tenure as President.

Membership to EOA is free and open to anyone interested in Earth observation, irrespective of their affiliation, career stage, application, or geographic location. As of June 2020, EOA had 575 members, who reflect the diversity and ubiquitous nature of EO in Australia, with interested individuals and representatives from research, education, all levels of government, professional organisations, media and publications, non-government organisations (NGOs), not for profit organisations (NFPs), defence, large business, start-ups, and small and medium enterprises.

The highest proportion of membership is from the research and education sectors (35.31%), followed by state, territory, and local governments (16.33%) and then Commonwealth government (11.84%). Geographically our membership is spread across all states and territories in Australia with most members residing in Queensland (26.22%), New South Wales (22.83%) and the ACT (14.80%).

### Support

To-date all support has been provided by

- The University of Queensland's Remote Sensing Research Centre at the School of Earth and Environmental Sciences for operations and accommodation resources and as host of the registered office of EOA
- The Queensland and New South Wales state governments through the Joint Remote Sensing Research Program for operations resources
- Geoscience Australia for support of EOGN and EOA activities
- Sponsorship for the Advancing Earth Observation Forum 2021-22

In addition, all activities by the EOA Management Committee have been provided on a voluntary basis by its members.

EOA gratefully acknowledges and sincerely thanks the support provided by the groups listed above, as we would not be able to function and indeed exist without it.

## Primary Activities

EOA activities during this period included:

- The delivery of four community events - one online Whole of Community webinar and three emailed newsletters
- Three Earth Observation for Government Network (EOGN) workshops
- Planning of the Advancing Earth Observation Forum (AEO 2021-22)
- Coordination of and collection of results for four surveys
- Four submissions or contributions to submissions
- Representation by a number of our Management Committee members on national and international boards and committees.

All activities were held in accordance with Australian and Queensland government travel and public gathering directives in response to the COVID-19 pandemic, to ensure the safety and wellbeing of attendees.

## Future Directions

The future directions of EOA are driven by our vision to provide a venue for the inclusive collaboration, communication, and cooperation of Australia's diverse EO community. In 2021 the five priorities defined in our Australian Earth Observation Community Plan 2026 remain relevant, with substantial progress and clear impact achieved in most, as a result of EOA activities summarised in this Annual Report, together with numerous and rapid developments across the sector.

In support of this vision, it is our intention to further develop or embark on initiatives to:

- Grow our membership base in terms of both numbers and diversity
- Continue to provide informative, relevant, and regular content to our members
- Host and deliver the Advancing Earth Observation Forum program during 2021-22
- Contribute to help shape national strategic discussions, roadmaps, and initiatives relevant to Earth observation
- Develop models for diverse groups in the EO sector to effectively and efficiently engage and collaborate with each other
- Develop mutually beneficial relationships with professional associations and/or associated groups
- Develop a pathway towards future financial and operational sustainability
- Collaborate with the Queensland Government, the University of Queensland, and SmartSat CRC to establish and operate an EO analytics hub in Brisbane
- Acknowledge and recognise the traditional owners of the lands and waters on which we work across Australia, and commit to furthering this recognition and jointly linking indigenous approaches into our work in the future



## Contents

EXECUTIVE SUMMARY.....	2
About EOA.....	2
Governance and Membership.....	2
Support.....	2
Primary Activities.....	3
Future Directions.....	3
EARTH OBSERVATION AUSTRALIA INC. ....	5
Mission .....	5
History .....	6
MESSAGE FROM THE PRESIDENT .....	7
EOA PEOPLE.....	9
Operations and Management .....	9
Members .....	13
Supporters .....	16
EOA ACTIVITIES.....	17
Community events.....	17
Newsletters.....	17
Surveys .....	17
Earth Observation for Government Network (EOGN).....	18
Advancing Earth Observation Forum .....	19
Contributions and Submissions.....	21
Collaborations .....	21
FUTURE DIRECTIONS.....	22
EOA FINANCES .....	23
Treasurer’s Report for the 2020/21 Financial Year.....	23
Verification of Financial Statement:.....	25
ACKNOWLEDGEMENTS.....	26

## EARTH OBSERVATION AUSTRALIA INC.

Earth Observation Australia Inc. (EOA) is a not-for-profit organisation whose members are individuals with an interest in Earth observation.

### Mission

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

Early in our inception, our forward-looking [Australian Earth Observation Community Plan 2026](#) was developed - through community consultation - to progress this mission by way of five priority areas of action:

1. **Connection and Coordination** — establishing a consistent vision within the Australian Earth observation community, and delivering processes for internal coordination to ensure effective collaboration, resource use, and advocacy for Earth observation in Australia and internationally.
2. **Securing Australia’s Role in the International Earth Observation Community** — Australia must be an essential component of the international Earth observation capability, delivering benefits to the international community and securing our access to and involvement in international Earth observation programmes.
3. **Infrastructure and People** — developing, supporting and sustaining a wealth of trained professionals and quality infrastructure to enable world-leading Earth observation research, innovation and application development.
4. **Access to Earth Observation Data and Services** — ensuring all Australian Earth observation 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 Earth observation products and services suited to user needs, and supporting commercial development of Earth observation applications.

Australia’s active Earth observation (EO) community is distributed across interested individuals, defence, research and education, government, private industry, not-for-profits, and non-government organisations. EOA enables these disparate individuals and organisations to impartially connect, learn, share and work to grow capability and improve essential EO activities and services for the future.

A coordinated and consistent approach is essential to:

- Strengthen Australia’s competencies and growing capabilities in Earth observation
- Support Australia’s professional reputation and recognition in the international EO arena and to give back to the global EO community
- Link civil and defence applications for dual use, public good, and sovereign capability to lower the risk to Australian industry and government, and
- Support the Australian Space Agency (ASA) whose responsibilities include the coordination of civil space matters

## History

Earth observation - a suite of activities used to gather data about the Earth from satellites, aircraft, remotely piloted systems and more - is ever increasingly underpinning decision-making. This need has driven rapid expansion in the number and variety of research, processing, innovation, and collection bodies who service it. The technology is also rapidly changing and developing.

Since its 2013 inception, from the common vision of colleagues who saw the need for a unifying focus within this developing and complex industry, EOA has grown significantly. We are a community of more than 570 members, we host whole-of-community events and webinars regularly and are actively engaged in preparation of the inaugural Advancing Earth Observation Forum series (AEO 2021-22), with the aims of connection, coordination, engagement, and capacity building.

Earth Observation Australia Inc. became an Incorporated Association in Queensland in July 2019 and an Australian Registered Body in September 2019. At the time of incorporation, the model rules provided by the Queensland Government Office of Fair Trading were chosen for our Constitution, with some slight variations. After two years as an incorporated association and following considered discussions with and feedback from the EOA Management Committee, EOA altered several rules in the Constitution. These changes were proposed to the EOA membership as six motions to cover:

- Changes in the terms for members of the Management Committee (MC)
- How elections are held and votes are collected
- Introduction and acceptance of an additional governance document – the EOA By-laws
- The correction of a small error in the original rules

The motions were presented to the EOA membership via an Electronic Direct Marketing (EDM) post on 16 June 2021. Members' votes were accepted electronically prior to and during an online special general meeting of the EOA membership on 1 July 2021. A quorum of members attended the meeting and all motions were passed. Details of the motions and voting are available in the meeting minutes on the EOA website governance page. The updated Constitution and approved By-laws are also available on the governance page.

This document represents the second Annual Report of Earth Observation Australia Inc.

In creating this report, our intention is to:

- Gratefully acknowledge and thank the support of the University of Queensland
- Gratefully acknowledge and thank the support and cooperation of Geoscience Australia
- Gratefully acknowledge and thank the voluntary activities of the 2020/21 Management Committee
- Present a summary of our membership
- Present an overview of the 2020/21 activities of EOA
- Present an overview of EOA's planned future activities in 2022, aligned to the future strategic direction of EOA as defined in the Plan
- Present the 2020/21 financial report

Contributors to this report are acknowledged on page 26.

## MESSAGE FROM THE PRESIDENT

To the Australian Earth Observation Community,

I would like to begin this report with a point which I hope will be a longer-term focus of EOA and acknowledge the traditional custodians of the lands and waters of Australia in which EOA works. I offer my respect to elders past, present and emerging as we work towards a just, equitable and reconciled Australia, and one where we recognise and build our shared knowledge and experiences.

Firstly, thank you to the diverse group of people across government, industry and academia who have made 2020-21 our most successful year to date, and one in which we have met several of our national community plan targets!

In this message, which will be my last as EOA President, I want to highlight our: origins and history; achievements and impacts; future plans for EO and space and spatial; and let you know EOA's future is in very good hands.

**Origins and history** – EOA started life in the middle of 2012 as the “Australian Earth Observation Community Coordination Group – AEOCCG “ – quite a mouthful. It was formally announced in a joint email from myself, Dr Adam Lewis and Professor John Trinder, inviting a wide range of people to “.....meet formally and provide advice to relevant national agencies, state agencies, the private sector, research institutions and academic institutions concerned with coordinating and funding earth observation.” AEOCCG met formally for the first time in February 2013, and since that time has been driven by substantial in-kind support from the University of Queensland and the Joint Remote Sensing Research Program, and funding from Geoscience Australia. Jo Edkins has continued to provide the essential support for us since this start. In 2014-2015 we ran a national consultation process to establish a national community plan for EO – which was completed and launched in 2016. Its five key priorities bear repetition here as we have addressed priorities 1 to 4, and continue to work on 5:

1. Connection and Coordination
2. Securing Australia's Role in the International EO Community
3. Infrastructure and People
4. Access to EO Data and Services
5. Generating Value

**Achievements and Impacts** - The following points list our major impacts over the past five years as a community and I am proud to say they go a long way to addressing the five priorities of our national community plan. Yes, we still have a lot to do – but we are off to a solid start which we can build on!

- EO has been included in Australia's National Research Infrastructure Investment Plan
- The EOA Community Plan was pivotal in securing long term recurrent funding for the Digital Earth Australia Program
- EO has been included as one of the seven national civil space priorities in the Australian Space Agency's Civil Space Strategy, and EOA has been part of the Agency's EO Technical Advisory Group
- EO is included as part of the Queensland, Western Australian, South Australian, New South Wales, Northern Territory, and Victorian governments' Space Strategies
- EOA has driven formal national EO coordination across governments through the Earth Observation for Government Network

- EOA successfully obtained funding to support a new national and international EO Forum “Advancing EO Forum 2021/22” and delivered a highly successful AEO-21 Mini Forum with over 600 registrants

***Future plans for EO and space and spatial*** - Australia’s private and public sectors are rapidly expanding our sovereign capabilities in EO satellite mission and data access, and EOA and its members are playing critical roles in planning and delivering these across government and industry sectors. This also includes a commitment to building a diverse and equitable community, which has been a focus of EOA since we started in 2013.

EOA’s future is in very good hands – After nine years working with everyone in our community to make EOA a reality, and to work to make changes for our community I am very happy to pass the President’s role to Professor Megan Lewis and our Management Committee. I know Megan will bring a very high level of professionalism, expert knowledge, and enthusiasm to the role and am confident in where EOA is going.

Finally, I would like to say a special thank-you to Jo Edkins who has been the backbone of EOA’s finance, governance, HR, communications, and website since we first started in 2013. More recently Sylvia Michael and Larissa Mar Fan have come on board to help Jo take EOA to the next level. We also acknowledge the ongoing support from Geoscience Australia, especially Jonathan Ross, Adam Lewis, Trevor Dhu, Dave Hudson, Alla Metlenko, and Norm Mueller.

Professor Stuart Phinn

Immediate Past President, Earth Observation Australia Inc.



## EOA PEOPLE

### Operations and Management

EOA has been extremely fortunate in the support and commitment of The University of Queensland's Remote Sensing Research Centre (RSRC) at the School of Earth and Environmental Sciences, the Queensland and New South Wales state governments through the Joint Remote Sensing Research program (JRSRP), and the EOA Management Committee. All work to date has been on a voluntary basis by all parties and is gratefully acknowledged.

In addition to providing the physical office space for EOA, the RSRC provided operations and accommodation support as detailed in the EOA Supporters section of this document.

### Executive Management Team:

Name	Position	Dates Active
<b>Professor Stuart Phinn</b>	AEOCCG Founder and Director	January 2013 to December 2017
	President	December 2017 to June 2021
<b>Dr Amy Parker</b>	Vice President	September 2020 to June 2021
<b>Ms Sylvia Michael</b>	Secretary	September 2020 to June 2021
<b>Ms Joanne Edkins</b>	Business Manager	January 2013 to December 2017
	Treasurer	December 2017 to June 2021

**Non-Executive Management Committee:**

<b>Name</b>	<b>Affiliation</b>	<b>Dates Active</b>
<b>Professor David Antoine</b>	Curtin University	December 2017 to June 2021
<b>Dr Renee Bartolo</b>	Department of Agriculture, Water and the Environment	September 2020 to June 2021
<b>Professor Alfredo Huete</b>	University of Technology Sydney	September 2020 to June 2021
<b>Dr Karen Joyce</b>	James Cook University / She Maps	September 2020 to June 2021
<b>Professor Megan Lewis</b>	The University of Adelaide	September 2020 to June 2021
<b>Dr Jasmine Muir</b>	FrontierSI	September 2020 to June 2021
<b>Dr Cindy Ong</b>	CSIRO	December 2017 to June 2021
<b>Dr Dan Wu</b>	ESRI Australia	September 2020 to June 2021

**Additional support provided by:**

<b>Name</b>	<b>Affiliation</b>	<b>Dates Acted</b>
<b>Ms Larissa Mar Fan</b> (National Earth Observation Partnerships Coordinator)	The University of Queensland	July 2019 to June 2021

			
<p><b>Professor Stuart Phinn</b> <b>President</b></p> <p>The University of Queensland Director Remote Sensing Research Centre at the School of Earth and Environmental Sciences, The University of Queensland Director Joint Remote Sensing Research Program Australian AquaWatch Mission Executive and Steering Committees Editor, Remote Sensing, Ecology Section</p>	<p><b>Dr Amy Parker</b> <b>Vice President</b></p> <p>CSIRO Centre for Earth Observation Member CEOS Working Group Disasters First alternate representative for CEOS on GEO Programme Board Member Australian Space Data Analysis Facility Advisory Board</p>	<p><b>Ms Sylvia Michael</b> <b>Secretary</b></p> <p>The University of Queensland</p>	<p><b>Ms Joanne Edkins</b> <b>Treasurer</b></p> <p>The University of Queensland</p>
			
<p><b>Professor David Antoine</b></p> <p>Curtin University Member Australia Space Agency Earth Observation Roadmap Technical Advisory Group Member Australian IMOS Science and Technology Advisory Committee Member NASA GLIMR Science Team Member ESA Sentinel 3 Validation Team Member CEOS Cal/Val and IVOS Working Groups</p>	<p><b>Dr Renee Bartolo</b></p> <p>Department of Agriculture, Water and the Environment Chair Northern Territory Drones Industry Network Chair Diversity &amp; Innovation working group, Australian Association Unmanned Aerial Systems Member Remote Sensing &amp; Photogrammetry Commission, Surveying and Spatial Sciences Institute</p>	<p><b>Professor Alfredo Huete</b></p> <p>University of Technology Sydney Co-Lead Environmental Monitoring and Protection task group (TG07) of Asia Oceania Group on Earth Observations (AOGEO) Member Phenology Commission of the International Society of Biometeorology (ISB) Member of AusPollen Aerobiology Collaboration Network</p>	<p><b>Dr Karen Joyce</b></p> <p>James Cook University / She Maps Member Diversity &amp; Innovation working group, Australian Association Unmanned Aerial Systems</p>

			
<p><b>Professor Megan Lewis</b>                  The University of Adelaide                  Chair NovaSAR-1 Steering Committee                  Member TERN Scientific Advisory Committee</p>	<p><b>Ms Larissa Mar Fan</b>                  The University of Queensland</p>	<p><b>Dr Jasmine Muir</b>                  FrontierSI                  Capability Demonstrator Lead – AquaWatch, SmartSat CRC                  Member Technical Advisory Committee, Australian Spatial Analytics                  Member Steering Committee, Theo Murphy Initiative Pilot Mentoring Program Careers in Space</p>	<p><b>Dr Cindy Ong</b>                  CSIRO                  Chair Committee on Earth Observation Satellites Working Group on Calibration and Validation                  Co-chair IEEE Geoscience Remote Sensing Society Geoscience Spaceborne Imaging Spectroscopy Technical Committee                  Member Science Advisory Group for EnMAP                  Member Mission Advisory Group for the European Space Agency Hyperspectral CHIME Satellite                  Member Cal/Val Working Group for NASA’s SBG                  Member Cal/Val of GEO Energy and Mineral Resources Management Societal Benefit Area</p>
			
<p><b>Dr Dan Wu</b>                  ESRI Australia</p>			

## Members

From inception, EOA membership has been free and open to anyone interested in Earth observation, irrespective of their affiliation, career stage, application, or geographic location. As of June 2021, we have 575 members, representing individuals belonging to the Australian and international EO community.

Our membership reflects the diversity and ubiquitous nature of EO information in Australia, with interested individuals and representatives from research, education, all levels of government, professional organisations, media and publications, non-government organisations (NGOs), not for profit organisations (NFPs), defence, large business, start-ups, and small and medium enterprise.

Table 1 and Figure 1 show the spread of membership across each of the major sectors:

Table 1 – Australian EOA Membership by Sector

Sector	2019/20 Count	2020/21 Count	2020/21 Percentage
<b>Research &amp; Education</b>	195	173	35.31%
<b>Government - State, Territories &amp; Local</b>	67	80	16.33%
<b>Government - Commonwealth</b>	50	58	11.84%
<b>Industry - SME</b>	56	50	10.20%
<b>Individual</b>	New category	50	10.20%
<b>Research Institute</b>	New category	43	8.78%
<b>Other</b>	55	16	3.27%
<b>Industry - Large Business</b>	14	12	2.45%
<b>Education</b>	New category	5	1.02%
<b>Defence</b>	6	3	0.61%
<b>Media &amp; Publications</b>	2	Included in "Other" category	

Notes:

Numbers from last year's annual report are shown for comparison.

Three additional categories are new to this year's report:

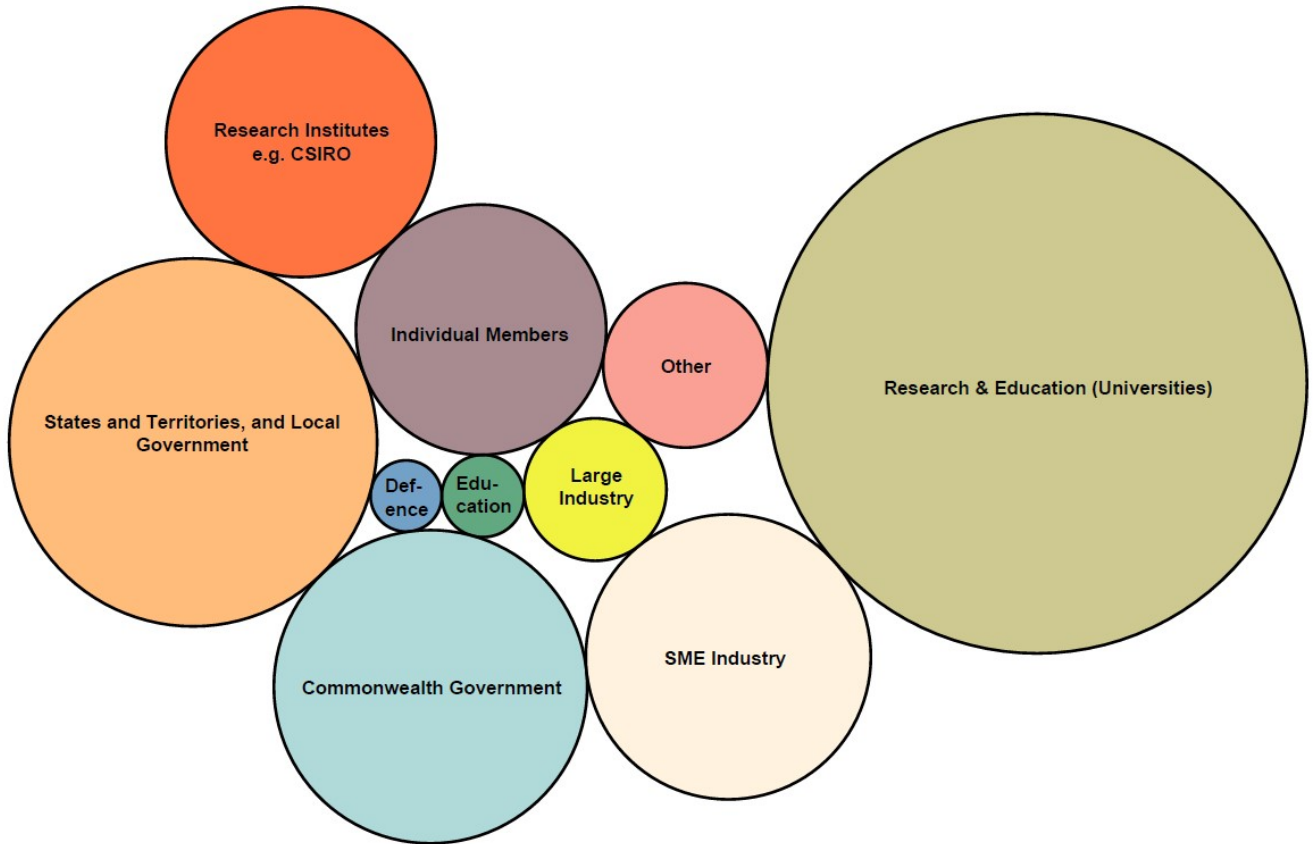
- Individual Members - members for whom we are unable to identify an organisation
- Research Institute - members who conduct research outside of universities or government e.g. CSIRO
- Education – members who identify as students or an organisation that conducts education without research

One category from last year has been included into Other in this year's report:

- Media & Publications



Figure 1 – Australian EOA Membership by Sector



**Definitions:**

The category Other includes Not-for-Profits (NFPs), Non-government Organisations (NGOs), Professional Associations, Media & Publications, and Events Management. These groups have individual representation of < 3 members.

Large Business includes commercial organisations with at least 200 staff.

Small and medium enterprises (SMEs) include commercial organisations with less than 200 employees and include micro businesses, sole traders, consultants, and start-ups.

Table 2 and Figure 2 show the spread of membership across each of the states and territories:

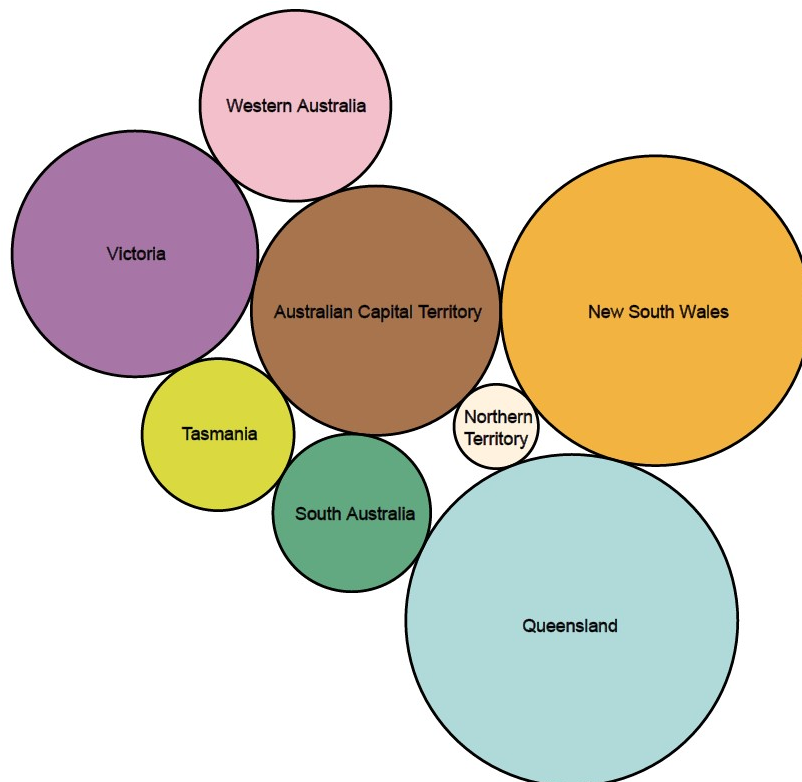
Table 2 – Australian EOA Membership by State or Territory

State	2019/20 Count	2020/21 Count	2020/21 Percentage
<b>QLD</b>	123	124	26.22%
<b>NSW</b>	109	108	22.83%
<b>ACT</b>	63	70	14.80%
<b>VIC</b>	74	68	14.28%
<b>WA</b>	29	41	8.67%
<b>SA</b>	25	28	5.92%
<b>TAS</b>	18	26	5.50%
<b>NT</b>	4	8	1.69%

Notes:

Numbers from last year’s annual report are shown for comparison.

Figure 2 – Australian EOA Membership by State or Territory



## Supporters

EOA gratefully acknowledges the support of the following groups:

Name	Description	Dates Active
<b>The University of Queensland’s Remote Sensing Research Centre (RSRC) at the School of Earth and Environmental Sciences</b>	Operations and accommodation resources Hosts the registered office of EOA	Commenced 2013, on-going
<b>Queensland and New South Wales state governments through the Joint Remote Sensing Research Program (JRSRP)</b>	Operations resources	Commenced 2013, on-going
<b>Geoscience Australia</b>	EOA activities	Commenced 2018, on-going
<b>Geoscience Australia</b>	Earth Observation for Government Network (EOGN) activities	Commenced 2018, on-going
<b>Sponsorship</b>	Advancing Earth Observation (AEO) Forum 2021-22	Commenced 2020, on-going

## EOA ACTIVITIES

### Community events

EOA hosts regular Whole of Community (WoC) webinars to educate and engage the EO community.

For the 2020/21 FY, the following WoC webinar was held:

- 12 November 2020 – Whole of Community Meeting followed by an interactive session on *Satellite Imaging Radar in Australia Data access, application development and use*, presented by Dr Amy Parker, CSIRO and Vice President of EOA, Greg Madden of Geoimage Pty. Ltd., and Professor Linlin Ge, University of New South Wales

Slide presentations and video recordings (if available) of webinars are provided on the EOA website.

### Newsletters

EOA distributes regular electronic newsletters to subscribed members. Content includes:

- Upcoming events of interest, including the Advancing Earth Observation Forum 2021-22 series of events
- Reference articles
- EO collaborations, including the Earth Observation for Government Network (EOGN)
- Upcoming and recent webinars, including the Whole of Community series and technical presentations
- Release of and links to government strategy and policy documents
- Research and industry grants
- Employment and study opportunities
- Other items of interest

For the 2020/21 FY, the following newsletters were distributed:

- August 2020
- November 2020
- May 2021

### Surveys

As a service to our members and associated groups, EOA actively promotes surveys and questionnaires that are relevant to the Earth observation community.

Surveys were posted for third party groups and EOA in the 2020/21 FY for the following:

- October 2020 - *AEO 2021 Forum Format* to understand the impact of the COVID-19 pandemic on members participating in the Advancing Earth Observation Forum 2021 and their format preferences.
- November 2020 - *Earth Observation in the Australian Space Industry - A Key Skills Gap Survey* on behalf of SmartSat CRC, to identify present and future skills gaps within the Australian space industry, and in particular to highlight gaps and future requirements for Australia's Earth observation collection and analysis capabilities.

- December 2020 - *Help us understand and improve Australia's Small & Medium Enterprise Industry (SMEs) in Earth Observation!* to understand and begin to address the issues that small industry groups, including micro, small and medium enterprises, consultants, and start-ups, face.
- January 2021 - *Request for input from Australia's community of geostationary satellite image data users for design of Japan's Himawari-10!* on behalf of the Bureau of Meteorology (BOM) on application and sensor/image requirements in the design of the new Himawari-10 geostationary imaging satellite.

## Earth Observation for Government Network (EOGN)

EOGN is a targeted collaboration and priority-setting network that connects Commonwealth, state and territory government providers, developers and users of Earth observation (EO) data and its derived products to each other and to researchers. EOGN aims to build an understanding of the evolving EO landscape from early research through to the application of EO products for decision making and to facilitate the transition of EO research and activities to continentally applicable and fit-for-purpose products that are available on national infrastructure.

EOGN is run by EOA and fully funded by Geoscience Australia (GA).

An advisory group provides guidance and advice to the EOGN and includes representatives from:

- The University of Queensland
- Geoscience Australia
- CSIRO
- Department of Agriculture, Water and Environment
- Australian Bureau of Statistics
- Department of Environment, Parks and Water Security (Northern Territory)
- Department of Environment and Science (Queensland),
- Department of Biodiversity, Conservation and Attractions (Western Australia)
- Landgate (Western Australia)
- Department of Planning, Industry and Environment (New South Wales)
- Department of Environment and Water (South Australia)
- Department of Primary Industries, Water and Environment (Tasmania),
- Department of Environment, Land, Water and Planning (Victoria)
- FrontierSI

And observers from the Australian Space Agency.

At a workshop in August 2019 five topic areas were identified for prioritised focus through a series of workshops. These were:

- Vegetation and biomass - workshop held 28 April to 4 May 2020
- Land-cover and land-use - workshop held 3 to 9 June 2020. An additional workshop focused on national crop mapping was run in partnership with the Applied Agricultural Remote Sensing Centre at the University of New England, 14 to 16 October 2020
- Water - this topic was split into
  - Oceanic water: biological and physical properties - workshop held 7 to 10 December 2020
  - Water Quality - workshop held 19 to 22 April 2021
  - Water Quantity - workshop planned for first quarter of 2022



- Fire - workshop planned for last quarter 2021
- Topography - workshop planned for first quarter 2022

Information from these workshops will be used to build an Australian Earth Observation Capability Database.

In addition to the remaining workshops, upcoming EOGN activities will focus on facilitating the participation of government employees in Digital Earth Australia training programs, linking government and industry EO activities, and a national town hall at the Advancing Earth Observation Forum 2022.

### Advancing Earth Observation Forum

The inaugural Advancing Earth Observation Forum 2021 (AEO 2021) was to be held in Brisbane at the Brisbane Convention & Exhibition Centre (BCEC) from Monday 23 August to Friday 27 August 2021. The event was originally planned for Monday 28 September to Friday 2 October 2020 but was postponed due to the global Coronavirus (COVID-19) pandemic. In October 2020, the forum organising committee conducted a survey of the EOA membership to determine the impact of continuing travel and gathering restrictions on forum attendance. After considering the results from this survey and further potential restrictions, the organising committee decided to postpone the face-to-face event a second time to Monday 22 August to Thursday 25 August 2022.

To ensure that the EO community remained engaged and connected during this second postponement and to lead into the August 2022 face-to-face forum, two additional events were proposed:

- A one-day fully online event on 25 August 2021 – the AEO Mini Forum 2021
- A series of bi-monthly “Building AEO Community” webinars from October 2021 to July 2022

The objective of AEO 2021-22 is to be a unique, engaging, and interactive series of events with a focus on learning, contributing, and connecting. To that end the forum will have a range of presentation and engagement sessions suited to each event format including:

- Keynote presentations
- Pechakuchas
- Learning labs
- Interactive posters
- Technical presentations
- Un-conferences
- Debates
- Town halls
- Workshops
- Exhibition

Sponsorship opportunities for the August 2022 event are available as per the [sponsorship](#) page on the website and range from \$50,000 as the Forum Founder / Launch Sponsor to \$1,800 as a refreshment break sponsor.

As of June 2021, we have procured sponsorship from:

- Geoscience Australia
- Queensland Government
- Planet
- Curtin University
- Australian Space Agency
- TERN
- SmartSat CRC, and
- ETMC Technologies

These funds and support are received with much appreciation and thanks and reflect the sponsors' acknowledgement of the importance of investing in Australia's Earth observation future.

The Forum Organising Committee (OC) is led by four directors, all nationally- and internationally-recognised leaders in EO:

- Professor Stuart Phinn - The University of Queensland and Earth Observation Australia Inc. Immediate Past President
- Dr Renee Bartolo - Department of Agriculture, Water and the Environment and Earth Observation Australia Inc. Management Committee Member
- Dr Glenn Campbell – The University of Southern Queensland
- Dr Karen Joyce - James Cook University and She Maps and Earth Observation Australia Inc. Management Committee Member

Other members of the OC include:

- Professor Megan Lewis - The University of Adelaide and Earth Observation Australia Inc. Acting President
- Ms Jo Edkins - The University of Queensland and Earth Observation Australia Inc. Treasurer
- Ms Sylvia Michael - The University of Queensland and Earth Observation Australia Inc. Secretary
- Alison Soady – She Maps

## Contributions and Submissions

The Australian Space Agency's (ASA's) Civil Space Strategy 2019-2028 has identified seven National Civil Space Priority Areas, one of which is Earth observation:

*“Earth observation (EO) has untapped potential to grow Australia’s economy, for example, by improving agricultural monitoring, water management, and monitoring shipping routes. Through Geoscience Australia’s Digital Earth Australia (DEA) initiative, Australia is world-leading in this field. Australia will continue to focus on and develop this priority area to grow Australia’s broader economy.”<sup>1</sup>*

In 2021, EOA actively supported the ASA's Civil Space Strategy 2019-2028 through submissions or contributions to submissions by members of our Management Committee to the:

- Economic study into an Australian continuous launch small satellite program for Earth observation 2021, by Deloitte
- AusCalVal - Establishing Australia as a Global Leader in Delivering Quality Assured Satellite Earth Observation Data 27 May 2021, commissioned by Geoscience Australia in consultation with the Australian Space Agency, Bureau of Meteorology, and CSIRO
- Australian Academy of Sciences (AAS) National Committee for Space & Radio Sciences Decadal Space Plan: Earth Observation Australia in Space: a strategic plan for Australian space science Working Group Report
- Parliamentary Enquiry into Developing Australia’s Space Industry

## Collaborations

During the 2020/21 financial year, EOA signed a Memorandum of Understanding (MoU) with the Surveying & Spatial Sciences Institute (SSSI) to *“collaborate and support each other’s mission for the benefit of their members and the geospatial industry”*. The main objectives of the MoU are to collaborate on:

- Enhancing the capacity of spatial professionals across Australia and globally
- Sharing knowledge, experiences, and information of benefit to members of both organisations
- Responding to current and future industry challenges and trends
- Promoting and supporting the spatial profession at all levels of educational institution
- Supporting the utilisation of geospatial information to achieve the United Nations 2030 Agenda for Sustainable Development, and other global and national objectives

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<sup>1</sup> Ref: National Civil Space Priority Areas <https://www.industry.gov.au/data-and-publications/australian-civil-space-strategy-2019-2028/national-civil-space-priority-areas>

## FUTURE DIRECTIONS

The future directions of EOA are driven by our vision to provide a venue for the inclusive collaboration, communication, and cooperation of Australia's diverse EO community. In 2021 the five priorities defined in our Australian Earth Observation Community Plan 2026 remain relevant, with substantial progress and clear impact achieved in most, as a result of EOA activities summarised in this Annual Report, together with numerous and rapid developments across the sector.

In support of this vision, it is our intention to further develop or embark on the following initiatives:

- Grow our membership base in terms of both numbers and diversity, whether that diversity be with respect to geographic location, career stage, employment, or field of application
- Continue to provide informative, relevant, and regular Whole of Community meetings, technical presentations, and newsletters
- Host and deliver an Advancing Earth Observation Forum program during 2021-22. This will comprise the AEO Mini Forum in August 2021, the "Building the AEO Community" bimonthly webinars, and culminate in the Advancing Earth Observation Forum in August 2022, a face-to-face, fully interactive forum at the Brisbane Convention and Exhibition Centre.
- Contribute to shaping national strategic discussions, roadmaps, and initiatives relevant to Earth observation, including the Australian Space Agency EO Technology Roadmap, the Space + Spatial Industry Growth Roadmap 2030, and EO workforce and capability development
- Develop models for diverse groups in the EO sector to effectively and efficiently engage and collaborate with each other - for example, collaboration between research, government, and private industry. These include working groups focussed in areas of specific need and interest.
- Develop mutually beneficial relationships with professional associations and/or associated groups
- Develop a pathway towards future financial and operational sustainability for EOA Inc.
- Collaborate with the Queensland Government, the University of Queensland, and SmartSat CRC to establish and operate an EO analytics hub in Brisbane; this hub will also provide the Queensland EO node for the SmartSat CRC
- Acknowledge and recognise the traditional owners of the lands and waters on which we work across Australia, and commit to furthering this recognition and jointly linking indigenous approaches into our work in the future

## EOA FINANCES

### Treasurer's Report for the 2020/21 Financial Year

As at end of the 2020/21 financial year EOA had not achieved financial independence. Since EOA's inception in 2013, and incorporation in 2019, EOA has been funded by Geoscience Australia (GA) and The University of Queensland (UQ).

EOA resourcing in terms of operations, accommodation, and registered office is largely managed through in-kind contributions by UQ's Remote Sensing Research Centre at the School of Earth and Environmental Sciences and the Queensland and New South Wales state governments through the Joint Remote Sensing Research Program (JRSRP).

Significant volunteer contributions are also made from the EOA Management Committee and members contributing to various EOA working groups.

At the time of publishing this report EOA does not have nor maintain a bank account and therefore does not manage income and expenditure. This means that there are no finances to formally report on for the 2020/21 financial year. EOA currently qualifies as a Level 3 Incorporated Association<sup>2</sup>, and therefore an independent financial audit is not required.

### In-Kind contributions

UQ continues to support EOA through in-kind funding for operational personnel and operating costs (office space, workstations, telecommunications, websites, and webinars, etc.). The EOA operational personnel support and complement the efforts and direction of the Management Committee. The following contributions represent the in-kind commitment by UQ to EOA. Costs are inclusive of indirect costs to cover the infrastructure requirements for each position:

#### In-kind personnel costs:

Name	Position	Number of Units (FTE)	UQ Contribution
Stuart Phinn	Director	0.1	\$33,618
Joanne Edkins	Research Program Manager	0.3	\$51,610
Larissa Mar Fan	National EO Partnerships Manager	0.2	\$29,428
Sylvia Michael	Business Manager	Casual	*\$15,626
<b>Total (GST exclusive)</b>			<b>\$130,283</b>

\* Sylvia Michael's contribution is personal in-kind based on UQ salary values.

<sup>2</sup> Level 3 Incorporated Association in Queensland is defined as having both the value of assets and revenue less than \$20,000.

Ref: <https://www.qld.gov.au/law/laws-regulated-industries-and-accountability/queensland-laws-and-regulations/associations-charities-and-non-for-profits/incorporated-associations/financial-responsibilities-for-incorporated-associations/making-your-association-annual-report>



## Funding

Geoscience Australia continues to fund two projects that operate under EOA. The governing agreements and finances are managed by The University of Queensland. The projects and funding (GST exclusive) are as follows:

### 1. Earth Observation Australia Inc.

This funding enables EOA to:

- Consult with the community on technical, scientific, ethical, and professional issues e.g. data needs, technical best practice, emerging capabilities.
- Foster collaboration between the EO community and Industry-Government-Not for Profit entities that can utilise information derived from Earth observation data, products, and services.

Project duration	2018/19	2019/20	2020/21
<b>1 April 2018 to 30 September 2022</b>	\$20,962	\$20,962	\$230,000

### 2. Earth Observation for Government Network (EOGN)

This funding supports the running of EOGN and delivery of targeted workshops:

Project duration	2020/21	2021/22
<b>22 August 2021 to 21 August 2023</b>	\$115,142	\$119,871
<b>UQ in-kind project contribution</b>	\$16,204	\$16,204

## Sponsorship

### 1. Advancing Earth Observation Forum 2021-22 (AEO 2021-22)

Sponsorship has been procured to support the delivery of the AEO Forum events being held during 2021 and 2022. The governing agreements and finances are managed by The University of Queensland. As of June 2021, we have received the following sponsorship (GST inclusive):

Sponsorship Package	Company	Value
<b>Forum Founder / Launch Sponsor</b>	Geoscience Australia	\$50,000
<b>Tailored Sponsorship</b>	Queensland Government	\$25,000
<b>Forum App</b>	Planet	\$7,000
<b>Bronze Sponsor</b>	Curtin University	\$6,000
<b>Bronze Sponsor</b>	Australian Space Agency	\$6,000
<b>Posters Sponsor</b>	TERN	\$3,000
<b>In Program Session Sponsor</b>	SmartSat CRC	\$2,800
<b>Exhibitor</b>	ETMC Technologies	\$3,750

## Verification of Financial Statement:

The association's financial records show the association keeps adequate financial records to correctly record and explain transactions, and to enable a true and fair financial statement to be prepared.

Ms Joanne Edkins

Treasurer

Earth Observation Australia Inc.

1 September 2021

## ACKNOWLEDGEMENTS

This report was prepared for Earth Observation Australia Inc. by the following contributors:

- Professor Stuart Phinn – Earth Observation Australia Inc. and The University of Queensland
- Professor Megan Lewis – Earth Observation Australia Inc. and The University of Adelaide
- Ms Joanne Edkins – Earth Observation Australia Inc. and The University of Queensland
- Ms Larissa Mar Fan - Earth Observation Australia Inc. and The University of Queensland
- Ms Sylvia Michael - Earth Observation Australia Inc. and The University of Queensland