
Attachment 1. Submission to the House of Representatives Standing Committee on Industry, Science and Resources Inquiry into Developing Australia's Space Industry.

We welcome this opportunity to make a submission to the House of Representatives Standing Committee on Industry, Innovation, Science and Resources inquiry into, and subsequent report on, Developing Australia's Space Industry. While we have an interest in all the Terms of Reference of the Inquiry we would like to focus specifically on the following:

1. Commercialisation of research and development, including flow on benefits to other industry sectors
2. Future research capacity, workforce development and job creation; and

It is our belief that Commonwealth Government support for the Australian Space Industry (and the rural RDCs) is heavily weighted towards government and university research institutions and does not adequately recognise the contributions and opportunities for private sector involvement in collaborative R&D that will lead to operational impact and sector growth.

We contend that numerous Australian Government agencies, and in particular CSIRO and several universities, are not collaborating adequately with the private sector in relation to R&D resulting in reduced impact and often failure to realise operational industry benefits. We also contend that in many cases CSIRO and universities are actively "locking up" publicly funded IP and directly competing against the private sector using public resources.

Anti-Competitive Behaviour and Competitive Neutrality

We would like to bring to the Committees attention anti-competitive behaviour of CSIRO and Data61 and the impact these practices are having on the development of the Space Sectors and Earth Observation industries.

CSIRO recently released the [ePaddocks™](#) product, claiming "hassle-free access to paddock boundary data for unlocking paddock-based applications and insights across the Australian land sector". The product was made available for download for \$20,000. The ePaddocks product was developed entirely using public funding and should have been made available to the industry under open licencing. The licencing conditions provided are completely anti-competitive. See below an extract of the licencing conditions.

1. *The Data may only be used for the Recipients internal purposes, which excludes using ePaddocks data for developing a competitive product.*
2. *The Data cannot be distributed or sub-licensed to partners or other third party organisations without the expressed written consent of CSIRO.*
3. *The Recipient may visually display paddock boundaries and agricultural classifications contained within the Data to its customers via its own proprietary software platform.*

The [ePaddocks™](#) product is being utilised by Digital Agriculture Services Pty Ltd (DAS). CSIRO are a founding equity partner in DAS. Other companies would be seen to be breaching the anti-competitive licensing if their products were addressing the cropping sector market. CSIRO have also licensed the [exclusive global rights](#) to the Graincast™ technology to Digital Agriculture Services (DAS). In addition to handing decades of research and millions of dollars in public investment to a single company in which it holds shares, CSIRO's Data61 program is then providing preferential access to CSIRO labour resources and shared office space to the same company whose registered business address is the same [address as Data61](#).

CSIRO have also licenced the APSIM crop model to Flurosats Pty Ltd. A company in which CSIRO's investment company [Main Sequence Ventures](#) owns significant shares. One of Flurosats's Board members also holds a partner position with Main Sequence Ventures. We would suggest this is a major conflict of interest.

We have also recently been made aware that CSIRO are planning to re-launch the [Pastures from Space](#) application which was originally launched over 15 years ago and has had numerous failed attempts to commercialise the application despite millions of dollars investment from Australian and State Governments and Rural RDCs. Again, public funding is being used to directly compete against existing private sector companies providing services to the grazing industry.

These practices are not only stifling innovation and commercialisation within the Earth Observation sector but limiting the adoption of decades research and millions of dollars in publicly funded research by the agricultural, property, carbon trading and environmental management sectors.

CSIRO's approach to industry collaboration seems to be spinning off a company and then providing exclusive rights to publicly funded IP to a company owned or partly owned by CSIRO. Then providing access to public sector scientists to support the business – directly competing against SME's who actually have "skin in the game".

We would suggest that practices such as these conducted by CSIRO raise significant issues of probity, competitive neutrality, and professional conduct. We are aware of numerous other examples that are likely to be brought to the Inquiry regarding CSIRO practices that are having a significant impact on SMEs.

We would also like to make the Committee aware of similar examples of universities using Australian Government and University funding and resources to compete against the private sector rather than collaborating:

- [Ag360](#) – a spin-off company owned and run by the University of New England based on IP developed through the Sheep CRC and other funding sources. Rather than licensing this IP to existing service providers in the market, UNE are attempting to duplicate and compete against other agricultural technology providers, significantly limited the use of this IP.
- The [Applied Agricultural Remote Sensing Centre](#) within UNE are providing services and platforms for the tree-cropping, grazing, carbon and rice industries that could easily be provided by the private sector. While the Centre is undertaking excellent applied research, we see very little if any collaboration with the private EO services sector. Industry dashboards being developed and published by the group are also not being actively integrated into existing commercial applications. There are also numerous examples of services to farmers which distort the commercial market using subsidised university staff which should be focused on undertaking research.

There are endless opportunities for universities and government agencies to work with commercial service providers to leverage the public investment in R&D in an open and transparent manner, that also facilitates B2B collaboration and increases the impact and reach of investment in R&D. Moreover, this lack of coordinated and collaborative research leads to a fragmented market and limited industry adoption.

[Insourcing vs Outsourcing](#)

Currently, Government is one of the largest users of earth observation imagery for natural disaster management, emergency management, security, maritime surveillance, land management, infrastructure change, vegetation change and management and yet the Australian Space Agency's focus for Earth Observation appears to be on providing funding to Government Agencies and CSIRO, through Digital Earth Australia, excluding the private sector entirely. It should be noted that many of the tasks and applications being supported are already being undertaken by existing private sector companies.

In Australia, the commercial sector is often not even approached to undertake Government work, rather the Department secures additional funding to undertake the work internally (insourcing), or engages universities and research organisations who often have little understanding of the practical issues and impact of the work they are embarking on, to undertake the work.

This raises significant issues of both value-for-money in relation to public expenditure and competitive neutrality.

R&D Innovation – the environment has changed.

The changes we are seeing in the Space Industry and Earth Observation sectors are unprecedented and accelerating. 10 years ago, large-scale operational Earth Observation systems were largely restricted to government and defence applications. Private sector involvement was dominated by global companies and commercially viable on-farm applications that delivered real value were scarce. There were also major barriers to small businesses associated with large investments in IT infrastructure and communication systems to create or deliver on-ground applications.

In the last 5 years the entire Earth Observation Ecosystem has changed. Major investments in publicly available EO satellites such as [ESA - Sentinel](#) and private investments such as [Planet](#) has revolutionised capabilities and access to data. Access to high-performance cloud computing and communications infrastructure has completely removed any barriers to small and innovative companies developing operational applications.

SMEs are now able to develop and implement Earth Observation analytic platforms capable of servicing paddock-to-nation public and commercial applications seamlessly. SME's such as ours and many other "tech companies" in Australia are hiring PhDs in data science, computer science and earth sciences to fast-track R&D and innovate and deliver operational (commercial) services in a fraction of the time of traditional government funded programs led by the Rural RDCs and others. Existing government R&D investments continue to follow a linear path through the research sector with little involvement from the commercial sector until the project is finished – generally leading to failed research adoption and commercialisation.

We would highlight the recently formed Agriculture Innovation Australia (AIA) initiative which includes a consortium of the 15 Rural RDCs. AIA provides an opportunity to re-cast the continuum of R&D, innovation and commercialisation. These organisations could foster collaboration between the research sector (government, universities and CSIRO) and highly innovative private sector companies that have the ability to drive further innovation and adoption through B2B collaboration.

SME's generally do not have the time to apply for "low-probability" grant funding and technology companies such as ours tend to rely on the governments R&D Tax Incentive Program. Though we would argue that this program is generally more effective for companies building "physical products" than companies in the software product development space.

Conclusion

There are enormous opportunities for Australia to develop a vibrant and globally competitive Space Industry and Earth Observation service sector that directly contributes to the sustainable and profitable development of agricultural and ecosystem service sectors, the management of our environment and GDP.

Currently, the Space Agency has done very little to advance the economic benefit on offer from the Earth Observation downstream analytics services sector and may have facilitated government agencies competing against the private sector or missed opportunities for efficiencies that can be gained from the use of existing capabilities, technology and private sector innovation.

Australian Governments should look to countries such as the UK and the USA for examples of government and industry working together to achieve long-term economic growth through productivity gains that meet current and future requirements. With major developments in EO capabilities in the private sector in recent years significant growth can be achieved through open and transparent tendering.

The Government investment paradigm in R&D is outdated and largely ignores the significant innovation (applied R&D) occurring in the private sector developing Earth Observation applications – particularly SMEs in Australia. There must be a recognition and acknowledgement that innovation is not only the domain of research institutions, and that the linear paradigms of Research, Development, Adoption and Extension are over. There are enormous opportunities to accelerate the development and adoption of space and related technologies through

truly collaborative and applied R&D that ensures investment maximises impact and outcomes for both public and private benefit.

The issues of competitive neutrality anti-competitive behaviour being practiced by CSIRO and some other research institutions should be investigated as a matter of priority. These practices are not only stifling innovation and commercialisation within the Earth Observation sector but limiting the adoption and potential impact of decades research and millions of dollars in public funding.