Australian Government
Department of Industry, Science, Energy and Resources

Submission on Opportunities for Strengthening Australia's Relations with the Republic of France

Department of Industry, Science, Energy and Resources

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Overview of the DISER Portfolio Engagement with Republic of France

The role of the Department of Industry, Science, Energy and Resources (DISER) is to support economic growth and job creation for all Australians. By investing in businesses, industry, science and technology, we support economic transformation and productivity growth, advancing the Government's economic agenda to create high-value jobs and globally-competitive industries. We provide the enabling business environment and regulatory frameworks that encourages businesses and industries to invest, adapt and grow.

Our investments build scale in areas of competitive strength, such as our world-leading natural resources and energy sectors. We are also aligning and leveraging our combined resources, energy, emissions and science policies to help address challenges of national and global significance, including economic resilience in the face of the current COVID-19 pandemic, as well as emissions reduction, energy security and affordability.

Building strong relationships with international partners is vital for the department and its portfolio agencies. Deeper scientific engagement with international partners is a strategic objective of this department. Increased engagement through international markets and supply chains are key to supporting market development. International cooperation on space is vital if Australia is to meet the target of 20,000 additional jobs and growth to $12 billion per annum of the Australian space sector by 2030.

DISER engages with the Republic of France bilaterally, through the European Union (EU) and multilateral fora, such as the OECD and the G20. In areas of mutual interest, the department is interested in strengthening relations with France, to meet our aim of supporting growth and increased living standards for all Australians.

The launch of the Australia-France initiative (AFiniti) in 2018 provides the opportunity for further collaboration in areas that are innovative and cutting edge. DISER works closely with the Department of Foreign Affairs and Trade (DFAT) on AFiniti related matters.

The Australian Institute of Marine Science (AIMS), part of the DISER portfolio, has made an individual submission to this Inquiry.

Opportunities for Strengthening Engagement

At the time of preparing this submission, DISER priorities were focused on responding to the Novel Coronavirus (COVID-19) pandemic. As such, this submission provides background on current DISER portfolio engagement with the Republic of France, and identifies broad opportunities for possible increased engagement, should funding and resources permit.

Below is a summary of possible opportunities for strengthening engagement with France. Further context is provided in the Background section of this submission.

- The completion of a comprehensive and high-quality free trade agreement between Australia and the European Union will help to strengthen and diversify bilateral trade and investment links
- Continued engagement by the Australian Space Agency with *Centre National D'Études Spatiales* (CNES) and the European Space Agency (ESA) will support mutual growth of the space sectors and both social and economic benefits
- Australia's Mining Equipment, Technology and Services (METS) sector is a world leader in environmental and safety performance, making Australia well-placed to assist France in the revitalisation of their mining sector

- Australia has the potential to be a reliable and environmentally and ethically responsible supplier of critical minerals for France and the EU, providing increased trade and investment opportunities
- Australia's Step-up in the Pacific provides an opportunity for increased industry engagement in the French Pacific, especially in mining and energy in New Caledonia.

Background on Current DISER Engagement with France

DISER Engagement with the OECD

The OECD is a core multilateral organisation for Australia and one of the world's key standard setting bodies. DISER currently has two Counsellors located in Europe who engage with the EU and OECD committees relevant to the department and its portfolio agencies. Given the cross-cutting nature of some of the topics, DISER also draws on expertise across government.

Science, technology and innovation (STI) and digital economy policy in the OECD is advanced primarily through the Committee for Scientific and Technological Policy (CSTP), the Committee for Industry, Innovation and Entrepreneurship (CIIE) and the Committee for Digital Economy Policy (CDEP) along with a number of Working Parties.

The OECD influences Australian STI and digital economy policy by being a key source of high-quality statistics, which inform policy work and benchmark Australia's performance against other countries. OECD information allows Australian policymakers to compare the design and impact of policies with similar policies in international jurisdictions.

The department also engages extensively with the International Energy Agency (IEA), responsible for energy policy under the OECD umbrella. The Minister for Energy and Emissions Reduction, the Hon Angus Taylor MP, and the department represents Australia on the IEA Governing Board and various IEA working groups. Membership of the IEA provides Australia with access to the IEA's extensive research and analysis, amongst other things.

Australia's membership of the IEA allows us to influence global energy policies and governance, significantly contributing to Australia's energy security and interests as a net energy exporter. This will be particularly important over the coming years as the IEA undertakes a modernisation and reform process.

Bilateral Trade and Investment with France

Future Growth Areas for Exports and Imports

The Australia-France trade and investment relationship is significant, including within the context of broader trade with the EU bloc.

In 2018-19, Australia exported $1.5 billion worth of goods to France and imported $5.7 billion, with 87 per cent of total two-way trade comprised of industrial and resources goods.[1] France was the destination of 14 per cent of Australian industrial and resources exports to the EU bloc, while French imports comprised 12 per cent of total industrials and resources imports from the EU.

[1] Australian Bureau of Statistics, 2020*, International Trade in Goods and Services, Australia, cat.* no. 5368.0, <*https://www.abs.gov.au/ausstats/abs@.nsf/mf/5368.0*>

Furthermore, there is a strong bilateral investment relationship – in the year 2019, French investment in Australia was over $35 billion while Australian investment in France totalled over $52 billion.[2] There is significant bilateral trade in aerospace, resources, mining equipment and luxury goods.

Major Australian merchandise exports to France include coal (by far Australia's largest export to France), aircraft and spacecraft parts, and ships, boats & floating structures. Major imports from France include pharmaceutical products (excl. medicaments), perfumes and cosmetics, medicaments (including veterinary) and alcoholic beverages.

Opportunities to increase Australia's trade in specialised and advanced manufactured goods exists through maintained and/or expanded support of export-focussed advanced manufacturers in Australia, including through the industry-led Advanced Manufacturing Growth Centre (AMGC). These include projects aiding business efforts to commercialise innovative technologies, following examples of AMGC projects on carbon-fibre and high-strength aluminium alloy auto-part products, which have prospects for domestic production and export to Europe and beyond.

Such opportunities are consistent with the objective of strengthening Australia's manufacturing industries through embracing new technologies and developing high value-added products and services for the global marketplace.

Australia – European Union Free Trade Agreement (A-EUFTA) and the Ministerial Dialogue

On 18 June 2018, Australia and the EU launched negotiations for a comprehensive and high-quality free trade agreement. The A-EUFTA presents an avenue to strengthen and diversify bilateral trade and investment links.

Australia is seeking significantly improved market access for industrial, resources and agricultural products through tariff liberalisation. In addition, Australian negotiators are pursuing rules of origin that facilitate market access and reflect modern production processes; and provisions to ensure standards, technical regulations and conformity assessment procedures do not create unnecessary obstacles to trade with France and the broader EU.

In November 2019, Australia held the inaugural Australia-France Ministerial Dialogue on Trade and Investment to deepen economic linkages and cooperation. Australia's Minister for Trade, and France's Minister for Europe and Foreign Affairs discussed the opportunity to cooperate further on critical minerals and the new hydrogen economy.

Noting the specialisation of current two-way trade, and the bilateral trade balance, initiatives such as the Ministerial Dialogue and the prospect of a future A-EUFTA are opportunities to build and diversify bilateral trade and investment links in through critical minerals and hydrogen, among others.

Digital Economy and Artificial Intelligence

Australia's Tech Future was released by the Australian Government in 2018, detailing how the nation can work together to deliver a strong, safe and inclusive economy, enabled by digital technology. *Australia's Tech Future* sets out a clear and unified narrative about the opportunities of the digital economy and what the Government is doing to ensure Australia is well positioned for the future.

[2] ABS catalogue 5352.0 Australian Bureau of Statistics, 2019*, International Investment Position, Australia: Supplementary Statistics, 2018*, cat. no. 5352.0, <https://www.abs.gov.au/ausstats/abs@.nsf/mf/5352.0>

The strategy outlines Australia's priorities, where we need to target investment and the impact of the digital economy on different people, groups and industry sectors. It highlights significant work already happening across government and ensures all Australians will benefit and share in the opportunities of a modern digital economy. It identifies the role of government in seizing the benefits of digital transformation including shaping international standards, digital trade rules and championing an open, free and secure cyber space to provide the enabling environment to realise the opportunities of digitisation.

Australia is well-recognised internationally for the strength of its regulatory and governance arrangements. If Australia is to minimise risk and maximise potential opportunities of the digital economy, it must engage with the international community as possibilities emerge, critical debates unfold and global rules are determined. This engagement is essential, otherwise we will be required to accept what is determined by others, which may not be in our national interest or in accordance with Australian values.

In 2019, Australia along with France and other countries adopted the OECD Artificial Intelligence (AI) Principles, which were upgraded into the G20 AI Principles in Osaka, Japan. OECD and G20 members have collectively agreed to a global policy and ethical benchmark that promotes innovation, inclusive growth, sustainable development, and human rights. In 2019, Australia was invited by France to participate in some G7 discussions on digital economy issues.

Industry Growth Centres Initiative

The Industry Growth Centres Initiative is helping Australia to be more internationally competitive by enabling industry sectors to build stronger futures for themselves. Growth Centres are actively engaging in international markets and looking for potential collaboration opportunities.

The Growth Centres have participated in numerous delegations and trade missions with France. The key purpose of these is for knowledge exchange, building mutual awareness and seeking out collaborative projects and stakeholder engagement opportunities.

In 2016, the last year of significant activity with France, a number of Growth Centres were involved in numerous collaboration events with France.

- DISER met with a number of people and organisations from across Europe including France to gauge interest from stakeholders, firms and companies to engage with the Advanced Manufacturing Growth Centre (AMGC).
- The Food and Agribusiness Growth Centre (FIAL) visited food clusters in France to gain insights on what underpins successful clusters.
- MTP Connect (the Medical Technologies and Pharmaceutical Growth Centre) and FIAL were involved in the Australian-French Entrepreneurship Challenge in June 2016. MTP Connect was also involved in the Australian-French Association for Research and Innovation Forum.
- In November 2016 representatives from FIAL, MTP Connect and the Oil, Gas and Energy Resources Growth Centre (NERA) visited a variety of European clusters to bring back learnings and recommendations for local implementation.

In April 2017, Australia's Chief Scientist, Dr Alan Finkel AO led an Innovation delegation including senior leaders from Australia's Industry Growth Centres (the Mining Equipment, Technology and Services Growth (METS Ignited), AMGC and MTP Connect) and peak bodies supporting innovation and science in Australia, and Australian Government representatives. The main outcomes of the delegation include the development of a more detailed understanding of the approaches that innovation leaders, such as Germany, Switzerland and France, are using to foster innovation and commercialisation, and how this might inform future actions by government, industry and research leaders to increase returns on investment in Australia's innovation system. The participation of the Growth Centres in the delegation

facilitated valuable opportunities with French counterparts, driving links between industry and research in their respective sectors.

Collaboration activities have helped various Growth Centres to successfully partner with French firms, and have helped to create a platform for future opportunities in particular within the advanced manufacturing and medical technology sectors. Examples include those listed below.

- AMGC, in conjunction with the South Australian Government, collaborated with France's Dassault Systèmes on the Virtual Shipyard Program. Since then, the program has supported 14 South Australian SMEs to develop digital capabilities in product and process innovation, in line with the naval shipbuilding enterprise.
- MTPConnect has identified Medtech France as a major player and leader in robotic surgical platforms. France's €1.5 billion Artificial Intelligence strategy includes a health component built around personalised, preventive, predictive and participatory healthcare, with specific reference to cancer detection. There are great opportunities for Australian medtech firms to collaborate and learn from France in this sector.

Science and Innovation

France-Australia Innovation and Science Relationship

Australia greatly values its important bilateral science, innovation and research ties with France. France is a science and innovation leader, being the world's sixth highest producer of scientific publications and patents each year. France was Australia's sixth highest publication partner over 2012-2016, with Australia being France's 11th highest collaborator (fifth highest non-EU collaborator) over the same period.

In 2012-2016, the top five research fields for Australian and French co-authored articles and reviews were biology, clinical medicine, physics and astronomy, earth and environmental sciences and basic medical research.

France and Australia share a long standing science and research relationship going back to 1988, when the treaty-level agreement, *the Australia-France Scientific and Technological Agreement*, was signed. The treaty with France does not commit funding or government resources and did not specify joint meetings.

Joint Science and Innovation Meeting

As the bilateral relationship evolved and innovation became more of a priority, there was agreement to commence regular government-to-government science and innovation meetings (Joint Science and Innovation Meeting (JSIM)) at mutually agreed times approximately every two years.

The JSIM is the Australian Government's principal mechanism for discussing science and innovation collaboration at a government-to-government level with France and is an opportunity to reinforce Australia's commitment to the relationship. The meeting is co-chaired by senior officials from both countries. Discussions cover policy matters, leverage bilateral science opportunities and overcome possible collaboration impediments.

The first JSIM was held in October 2016 in Paris. Since that meeting, a number of strategic partnerships between Australian and French research organisations and universities have taken place, forging stronger linkages between industry and academia.

Ongoing government-to-government dialogues, including the JSIM, offer an opportunity to further the strategic objectives of AFiniti and the 2018 Vision Statement – including enhanced science and innovation collaboration.

The 2019 JSIM presented further opportunity for France and Australia to exchange experiences in facilitating research-industry collaboration and consider opportunities for closer science and innovation alignment in areas of mutual interest. It also provided an opportunity for policy makers, senior executives and science representatives from major research organisations to discuss recent policy developments and programs in both countries.

The meeting was preceded by six thematic workshops on: Industry 4.0; Space; Climate, Environment and marine science; Plant ecology, Biodiversity on land and agriculture; Materials, energy, and mining; and Health. These workshops provided an opportunity for discussions in areas of mutual interest and an opportunity to connect French and Australian research organisations and universities.

These discussions have also contributed to the on-going development of a joint roadmap, an outcome of the JSIM, with a focus on identifying and developing future collaborative opportunities. The roadmap is currently being developed and DISER will work with French colleagues to implement the roadmap over the next two years. A progress report on the activities under the roadmap will be on the agenda for the next joint meeting to be held in Paris, France in 2021-22.

Australian Government Support for Innovation, Science and Research Collaboration

The Global Innovation Strategy (GIS) is a whole-of-government approach to increasing Australia's innovation and science connections internationally. Under the GIS international collaboration is supported through a number of programs:

- Under the Global Innovation Linkages (GIL) programme, one project has listed France as a partner along with Singapore, United States, China, Taiwan and Switzerland, with funding of $1 million over four years to develop cheaper, stronger solar cells using advanced manufacturing equipment.
- In the rounds conducted to date, four Global Connections Fund (GCF) Priming Grants totalling $28,000 have been awarded for collaboration with France in areas including Medical Technologies and Pharmaceuticals.
- In the rounds conducted to date, two GCF Bridging Grants totalling $89,150 have been awarded for collaboration with France in the areas of Food and Agribusiness and Advanced Manufacturing.
- France is listed as a collaboration partner (along with China, Singapore, USA and Canada) in one grant under Round 1 of the Regional Collaborations Programme. The project aims to establish an international coalition to support the discovery of a safe, affordable, scalable and effective cure for hepatitis B ($83,000 over 15 months). Collaborating institutions from France involved include the Cancer Research Centre of Lyon and the National Agency for AIDS Research.
- The Cooperative Research Centres (CRC) Program supports Australian industries' ability to compete and produce. This is done by helping industry partner with the research sector to solve industry-identified issues. Six CRCs reported collaborations with 21 organisations from France in 2016-17.

Partnering in Astronomy

Australia is partnering with France in two international astronomy collaborations: the Square Kilometre Array (SKA) Observatory and the European Southern Observatory.

Australia is a foundation signatory to the SKA Observatory Convention (expected to enter into force during 2020) and will co-host the SKA Observatory. France, through the Centre National de la Recherche Scientific (CNRS), is a member of the interim SKA Organisation. The French Government is understood to be giving consideration to signing the Convention and becoming a member of the SKA Observatory.

France is a foundation member of the long-standing European Southern Observatory (ESO), which operates world-class optical and other telescopes in Chile. Australia recently entered into a strategic partnership with ESO as a step towards potential full membership by 2027.

As fellow members of both the SKA Observatory and ESO, there would be significant opportunities for bilateral and multilateral cooperation between Australia and France in various areas of science and technology.

Space Engagement with France

Existing Collaboration with France on Space Related Activities

The Australian Space Agency (the Agency) has been tasked by the Australian Government to transform and grow a globally respected Australian space sector that lifts the broader economy, inspires and improves the lives of Australians – underpinned by strong international and national engagement. The path to achieve this is set out in the *Advancing Space: Australian Civil Space Strategy 2019-2028* (the Strategy). It includes opening doors internationally for Australian innovators to grow a connected, respected, and globally competitive space industry in Australia.

The Strategy identifies the French space agency *Centre National D'Études Spatiales* (CNES) and the European Space Agency (ESA), which has 22 Member States including the Republic of France, as entities for engagement.

France is one of the largest spacefaring nations in the world, with one of the world's largest budgets dedicated to space. In 2018, the French budget for space was €2.4 billion inclusive of their contribution to ESA. In addition, its extensive experience in space and significant programs position France as an important partner for Australia.

Memorandum of Understanding with CNES

To support engagement with France, the Agency signed a Memorandum of Understanding (MoU) with CNES on 1 September 2018. This was the first MoU the Agency signed with an international space agency. Australia and France will work together to identify cooperative space activities and potential areas of collaboration to support the mutual growth and development of the space sectors of both countries and provide social and economic benefits to the broader community.

The Agency's work with France is also supported through close engagement with the ESA and the European Commission (EC) on opportunities for collaboration in space, which will flow through to member nations, such as France. The Agency also signed a Joint Statement of Strategic intent with ESA on 15 August 2019 and is currently working with the EC to establish a civil space dialogue.

The Agency will continue working with CNES on identifying projects of mutual interest and establishing arrangements for the implementation of cooperative activities under the MoU that align with our seven priority areas:

- access to space
- position, navigation and timing
- earth observation
- communications technologies and services
- space situational awareness and debris monitoring
- leapfrog R&D, and
- robotics and automation on Earth and in space.

Key Activities Supported under the MoU

The Agency could enhance existing linkages and relationships between the Australian space sector and France under the International Space Investment Initiative (ISI), which is the Australian Government's program to support international engagements. The ISI provides $15 million for specific space projects that build relationships with international space agencies for the benefit of Australian businesses. The ISI is a program open to all Australian organisations proposing projects with all international space agencies, including CNES. Project submissions are being assessed by a panel and successful projects will be announced by June 2020.

French-Australian relationships in the space sector are continuing to develop through existing collaborations between Australian research institutions and CNES.

Visiting Scientist exchanges with CNES and CSIRO are being explored to share knowledge and expertise between the two nations.

Mining Equipment, Technology and Services

Australia has one of the world's most innovative mining sectors, and has been at the forefront of some of the sector's most important developments in Mining Equipment, Technology and Services (METS). This includes remote operating vehicles, horizontal drilling, airborne exploration technologies, energy-efficient comminution and mineral flotation.

There are significant opportunities for both future export growth to France and an increase in French investment in the Australian mining sector.

Since 2017, the French Government has been pushing towards revitalising the French mining sector, through regulatory reform as well as its 'Responsible Mining' initiative, which focuses on reducing the environmental impacts of mining operations to maintain the sector's social licence to operate. The Australian METS sector, which has invested heavily in technologies to minimise waste and deliver world-leading environmental and safety performance, is well-placed to capitalise on this opportunity.

French companies are also seeking opportunities in Australia. In 2019, a French delegation of 13 companies offering services and equipment to the mining industry visited Western Australia. The visit included an introduction of the mining industry of WA, a presentation on the mining innovation and potential institutional partners, and a presentation by a panel of companies already active in the Australian mining market.

Critical Minerals

The Australian Government has committed to growing our domestic critical mineral supply and contributing to diversified global supply chains. This includes collaborating with trading partners, including the EU, to enhance two-way trade and investment opportunities and supporting the development of more robust, secure, environmental and ethical critical minerals supply chains.

Australia is blessed with an abundance of many of the critical minerals required to support EU ambitions to be a hub for renewable energy and electric vehicles. Australian companies and projects strive to meet best practice standards, providing France and the EU with access to a reliable, environmentally and ethically responsible source of critical minerals.

The Critical Minerals Facilitation Office (Office) has been established to drive and coordinate a national approach to critical minerals and has commenced discussions with France on areas for collaboration, including the potential to combine French rare earths processing expertise and Australian critical mineral projects, to develop Australia's downstream potential and supply processed rare earths to French companies.

The Office will continue to explore potential opportunities for collaboration on investment and trade pathways, R&D and policy that could enable Australia to support the EU's Green Deal objectives and diversify critical minerals supply chains.

National Measurement Institute (NMI)

NMI is a division of the Department of Industry, Science, Energy and Resources (DISER) and is Australia's peak body for measurement expertise, operating under the *National Measurement Act 1960*. It is at the interface between national and international measurement systems and, through effective participation in the peak international and Asia Pacific measurement forums, discharges international commitments of the Australian Government that are intrinsic to its responsibility to ensure international recognition, equivalence and acceptance of Australia's measurement system, and lead a robust and credible measurement system that meets Australia's needs.

NMI has bilateral collaboration on Scientific Metrology with Laboratoire National de metrologie et d'essais in electrical and nano- metrology. NMI also collaborates through joint participation in activities under the inter-governmental Metre Treaty and through projects under the multilateral European Metrology Programme for Innovation and Research.

On legal metrology, NMI collaborates with Bureau de la Métrologie and Ministère de l'Economie, des Finances et de l'Industrie. This collaboration takes place through joint participation in activities under the inter-governmental International Organization for Legal Metrology (OIML).

Commonwealth Scientific and Industrial Research Organisation (CSIRO)

As Australia's national science agency, CSIRO is solving the greatest challenges through innovative science and technology.

CSIRO partners collaboratively with business and the research sector as Australia's most trusted research institution and most connected innovator, working with every Australian university, government department and major Australian industry. CSIRO is one of the largest and most multidisciplinary mission-driven research agencies in the world, with more than 5,000 people based across 57 locations in Australia and around the world.

Europe is a key partner region for CSIRO, both in relation to basic scientific research and for commercialisation and applications of our industrial research. One of CSIRO's most active relationships with EU Member State institutions are with French institutions.

CSIRO has a number of key stakeholders in France, particularly in the Agricultural Science field. These include:

- Centre National de la Recherche Scientifique

- Groupe Limagrain
- Institut National de la Recherche Agronomique, and
- Vilmorin & Cie.

People-to-people exchanges strengthen bilateral networks and collaboration and establish strong relationships with future leaders in key fields of scientific and industrial research. Based on arrangements CSIRO has established with a number of institutions in France, CSIRO researchers host over 20 French interns each year. Many of these high-quality Masters-equivalent students go on to careers in key French industries, including the aerospace industry.

Government to government delegations provide opportunities for high-level focus on national priorities for Australia and France and can provide momentum to expand relationships. For example, in 2019 the French Science Minister for Higher Education, Research and Innovation, Frédérique Vidal brought a delegation to Australia to attend the most recent Joint Science and Innovation Meeting, hosted by Minister for Industry, Science and Technology, the Hon Karen Andrews MP. The program of meetings included the announcement of a number of new initiatives:

- France's Centre *National de la Recherche Scientifique* (CNRS) and CSIRO signed a Memorandum of Understanding (MoU) and an Agreement for the creation of an International Research Laboratory on membrane biogenesis with the University of Melbourne, University of Grenoble and Inserm, the French National Institute of Health and Medical Research
- CNRS and the Australian National University signed an MoU launching a joint call for PhD grant support
- establishment of an International Research Laboratory on photonics with five Australian and ten French partners
- a Letter of Intent with CNRS and three universities in Adelaide to launch the creation of an international research laboratory, enhancing cooperation on human-machine cooperation and autonomous systems, and
- a Letter of Intent between CNRS and four Australian Universities for the creation of a network on conversion and energy storage.

Offshore offices or research laboratories provide significant opportunities for linkages and exchange. CSIRO operates the CSIRO European Laboratory at the Agropolis International Campus near Montpellier in France, which focuses on environmental, agricultural and biosecurity research.

CSIRO has strong relationships with French counterparts in third countries in the Indo-Pacific, particularly through CSIRO's ASEAN Director, located in Singapore. CNRS's first independent subsidiary outside France is in Singapore. This is made up of four international labs staffed by 10 permanent researchers and 50 researchers on long-stay expatriate conditions. CSIRO and CNRS representatives in Singapore have identified several opportunities to expand cooperation in the region, including in Earth Observation and Renewable Energy. Opportunities to leverage the CNRS relationship in the Indo-Pacific for greater impact will be dependent on funding models able to support this form of implementation.

Australian Nuclear Science and Technology Organisation (ANSTO)

The Australian Nuclear Science and Technology Organisation (ANSTO) works across areas such as human health, the environment, and the nuclear fuel cycle to find solutions to some of the biggest questions in science and society for the benefit of all Australians and many others around the world. To find these solutions, ANSTO operates much of Australia's landmark research infrastructure, including one of the

world's most modern nuclear research reactors, OPAL; a comprehensive suite of neutron beam instruments; the Australian Synchrotron; the National Research Cyclotron; and the Centre for Accelerator Science. ANSTO also provides the Australian and international community and commercial clients with innovative products and services to improve human health, support industry, enable economic growth, and protect the environment.

ANSTO has strong ties with French nuclear services companies Orano (formerly AREVA) and CERCA. Orano reprocessed much of the spent fuel from the shutdown High Flux Australian Reactor (HIFAR) research reactor in Sydney, with the resulting waste returned to Australia in late 2015.

ANSTO has entered into a contract with Orano for the reprocessing of spent fuel from the Open Pool Australian Lightwater (OPAL) reactor in Sydney, with the intention that all the spent fuel from the lifetime of OPAL will be managed via this route. CERCA supplies ANSTO with proliferation-resistant low enriched uranium fuel for the OPAL reactor and target plates for nuclear medicine production.

ANSTO has entered into a Technical Agreement with the International Thermonuclear Experimental Reactor (ITER), a consortium of six countries and the EU, located in Cadarache in the south of France. ANSTO also has a range of other collaborations with French nuclear and research institutions, including an agreement with CNES and Inserm signed in the margins of the recent JSIM.

ANSTO offers yearly scholarships (SAAFE), in partnership with the French Embassy and AINSE, to support graduate students exchanges between the two countries.

Geoscience Australia (GA)

Geoscience Australia is the national public sector geoscience organisation and provides information on Australia's geology and geography to support government, industry and community decision making. Geoscience Australia applies science and technology to describe and understand the Earth for the benefit of Australia.

GA has an agreement with the French space agency Centre National d'Etudes Spatiales (CNES) to operate two radio uplink stations. GA has collected data from French Earth observation satellites and is collaborating with CNES to improve access to this data.

In partnership with CNES, GA operates two Doppler Orbitography and Radio-positioning Integrated by Satellite (DORIS) beacons at Mount Stromlo, ACT and Yarragadee, WA. The DORIS beacons support the precise determination of the orbit of low altitude satellites. GA and CNES are discussing future extension of the DORIS network in Australia with a site proposed at Katherine.

GA successfully repatriated its archive of SPOT satellite data to CNES in October 2019, and is negotiating release of historical satellite data acquired over Australia under an open license.

GA has an established relationship with the CNES, collaborating on data sharing and access of French Earth observation satellites.

GA, together with Australian state and federal partners under a cooperative funding model, operates the Copernicus Regional Data Hub under and MoU with the European Commission. CNES operates a similar service called PEPS. Earth observation value adding entities within New Caledonia make use of the Regional Hub in preference to PEPS, largely as a result of low bandwidth connections with France. CNES and GA discussed partnering on this and opportunity exists for co-investment in the regional hub.

Case study: using Earth observing to support multilateral cooperation across the Pacific

In 2019, Geoscience Australia hosted the largest ever meeting of the Group on Earth Observations, as "GEO Week 2019". GEO Week 2019, included a Ministerial Summit and a dedicated Pacific Island Program. Several representatives from New Caledonia (government, research, industry) participated as part of the official delegation from France.

Three GEO outcomes relevant to the Pacific region were the adoption of the Canberra Ministerial Declaration by GEO Member Ministers (which includes a commitment by GEO members to increase cooperation with the Pacific); the announcement of a strategic needs analysis for the development of an Earth Observation platform in the Pacific, and the drafting of a Talanoa Statement on Earth Observation collaboration in the Pacific.

In 2020, GA will continue to work with GEO governance bodies, GEO members and Participating Organisations, the relevant Council of Regional Organisations of the Pacific and Australian agencies (including CSIRO) interested in increasing engagement in the Pacific through GEO. Planned activities include a discussion paper to GEO's Executive Committee on options to strengthening engagement with the region, and supporting the Secretariat of the Pacific Community to undertake a strategic needs analysis of Earth observations in the Pacific.