

DG DIGIT

Unit.D2 (Interoperability Unit)

Open Source Software Country Intelligence Report Australia 2021

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Australia

Executive Summary

The use of open source software (OSS) in the Australian public sector was first set in motion in 2010. Following the Open Source Software Policy of 2010 released by the former Information Management Office, government agencies were provided with the Guide to Open Source Software released in 2011. Thereafter, responsibility for OSS was transferred to the Digital Transformation Agency (DTA). The DTA is the current government body tasked with promoting the use of OSS in Australia at the national level. In 2016, the Digital Service Standard criteria of the DTA set the best-practice principles for the design and delivery of government services, which included making source code open by default.

OSS has also been included in the digital strategies of state governments such as New South Wales, Queensland, Western Australia, and the Australian Capital Territory, with some of these states also opting to provide guidelines for the use and reuse of OSS in the state departments (New South Wales, Queensland and Victoria). Government agencies like IP Australia have also referred to the increased use of open source licenses in a report that set the strategic direction of the department.

On the national level, the Digital Marketplace.¹ of the DTA and the GovCMS are the main platforms where public agencies and departments can find open source tools to build their solutions. As for the states, solutions such as Western Australia's Locate website and multiple open data platforms that rely on the OSS solution, CKAN, for the federal, state and municipal bodies are evidence of the implementation of the strategies on different government levels.

Actors

This section presents the key governmental bodies that are responsible for setting OSS policies and the main strategic players that work together with the government at all levels to raise awareness on OSS.

Policy makers

• In 2011, the former Information Management Office (within the former Department of Finance and Deregulation) developed the Guide to Open Source Software for Australian Government Agencies², following the approval of the Open Source Software Policy in 2010³. The current body responsible for promoting OSS is the Digital Transformation Agency (DTA)⁴, an executive agency of the Australian government responsible for all tasks linked with improving and simplifying digital services and the development of skills. The agency provides advice to public

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¹ https://marketplace.service.gov.au/

² https://www.ghdonline.org/uploads/AGuidetoOpenSourceSoftware.pdf

 $[\]frac{3}{\text{https://www.yumpu.com/en/document/read/33887077/open-source-software-policy-australian-government-information-government-information-government-informati$

⁴ https://www.dta.gov.au/

agencies and institutions on ICT and digital investment proposals based on its Digital Service Standard criteria⁵ and it participates in hackathons on open data⁶.

- The IP Australia⁷ agency is an Australian governmental body responsible for administrating intellectual property regulation in the country. Within the Guidelines for Intellectual Property in Digital Businesses, the agency lists licensing and using open source⁸ as being important in the development of digital products, inviting developers to consider the reuse of existing code and take into consideration the terms of use and redistribution.
- The Minister for Customer Service of the New South Wales (NSW) Government⁹ is currently pursuing the promotion of OSS through the "Beyond Digital" strategy.¹⁰, released in 2019. Besides maintaining its own set of OSS repositories.¹¹, services such as the New South Wales Rural Fire Service.¹², the State Archives and Records Authority.¹³ have launched their own repositories.¹⁴, ¹⁵ and the eTendering.¹⁶ service was built with the use of OSS.¹⁷.
- The Government of Queensland. 18 has developed guidelines for the government departments on the development and reuse of OSS. 19. These guidelines are aligned with the Queensland Government Enterprise Architecture foundation principles. 20 for digital and ICT investment and policy decisions of the government. The code used in the government's website are available in multiple repositories. 21.
- The Victorian Government ²² provides a guide ²³ to help public services develop and reuse OSS solutions when building their digital platforms. This guide, part of a collection of digital guides ²⁴ that serve as a reference for best practices and standards, includes a set of legislative standards to be met on security, privacy and accessibility, under the regulation of the Office of the Victorian Information Commissioner ²⁵. A database for all repositories developed for the

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⁵ https://www.dta.gov.au/help-and-advice/digital-service-standard/digital-service-standard-criteria

⁶ https://www.dta.gov.au/news/teaming-govhack

⁷ https://www.ipaustralia.gov.au/

 $^{{}^{8}\ \}underline{\text{https://www.ipaustralia.gov.au/ip-for-digital-business/develop/licencing-and-open-source}}$

⁹ https://www.nsw.gov.au/

¹⁰ https://www.digital.nsw.gov.au/beyond-digital/ministers-foreword

¹¹ https://github.com/digitalnsw

¹² https://www.rfs.nsw.gov.au/

¹³ https://www.records.nsw.gov.au/

¹⁴ https://github.com/NSWRFS

¹⁵ https://github.com/srnsw

https://www.tenders.nsw.gov.au/

¹⁷ https://github.com/NSW-eTendering/NSW-eTendering-API

¹⁸ https://www.qld.gov.au/

¹⁹ https://www.qgcio.qld.gov.au/documents/open-source-software-guideline

²⁰ https://www.qgcio.qld.gov.au/documents/qgea-foundation-principles

²¹ https://github.com/qld-gov-au

²² https://www.vic.gov.au/

https://www.vic.gov.au/make-your-project-open-source-digital-standards

²⁴ https://www.vic.gov.au/digital-guides

²⁵ https://ovic.vic.gov.au/

Victorian Government is also available on GitHub.²⁶, as well as the API Design Standard.²⁷ adopted by the government for increased administrative collaboration.

- The Government of Western Australia ²⁸ references the use of OSS as one of the whole-of-government ²⁹ strategic principles to successfully implement the Information and Communications Technology (ICT) Strategy 2016-2020 ³⁰, which is under the responsibility of the Office of Digital Government ³¹. It also highlights the sharing and reuse of solutions in the Digital Services Policy Framework ³². State agencies such as the Department of Biodiversity, Conservation and Attractions ³³ share software ³⁴ developed on behalf of the state government. The state authority for land information, Landgate ³⁵, developed a public map viewer named Locate ³⁶ for information on public facilities, while the Western Australia Museum has a collection of repositories ³⁷ available on GitHub.
- The Australian Central Territory (ACT) Government refers to OSS within its Strategic Plan for ICT 2011-2015.³⁸ and the Government Digital Strategy 2016-2019.³⁹. OSS is listed as a tool to promote a "value for money approach to ICT procurement" and increase collaboration. Several repositories are shared on the institution's GitHub page.⁴⁰.
- On a smaller scale, the Government of Tasmania.⁴¹, the City of Melbourne.⁴², Glenorchy City.⁴³, the Sunshine Coast Regional.⁴⁴ local government have also created public repositories to publish their OSS solutions.

Strategic players

• Linux Australia. 45 is a non-profit organisation responsible for representing and supporting open source communities in Australia. It is composed of sub-committees. 46 created for different purposes such as sector-focused events and user groups. 47 located in all the Australian states and the Australian Capital Territory. Sub-committees such as GovHack 48 and DrupalGov were

²⁶ https://github.com/dpc-sdp

²⁷ https://github.com/VictorianGovernment/api-design-standards

²⁸ https://www.wa.gov.au/

²⁹ The whole-of-government approach refers to multiple agencies working together on the same subject to achieve greater and more integrated outcomes.

 $[\]frac{30}{\text{https://www.parliament.wa.gov.au/publications/tabledpapers.nsf/displaypaper/3914215afb73cc112672740b48257fd20052e83a/\$file/4215.pdf}$

³¹ https://www.wa.gov.au/organisation/department-of-the-premier-and-cabinet/office-of-digital-government

³² https://www.wa.gov.au/sites/default/files/2019-10/Design%20Principles.pdf

³³ https://www.dbca.wa.gov.au/

³⁴ https://github.com/dbca-wa

³⁵ https://www0.landgate.wa.gov.au/

³⁶ https://maps.slip.wa.gov.au/landgate/locate/

³⁷ https://github.com/wamuseum

 $^{{\}color{red}^{38}} \ \underline{\text{https://www.yumpu.com/en/document/read/5614635/the-strategic-plan-for-ict-2011-15-act-government-chief-minister-plan-for-ict-government-chief-minister-plan-for-ict-government-chief-minister-plan-for-ict-government-chief-minister-plan-for-i$

³⁹ https://www.cmtedd.act.gov.au/ data/assets/pdf file/0007/981952/ACT-Government-Digital-Strategy-2016-full.pdf

⁴⁰ https://github.com/actgov

⁴¹ https://github.com/dpipwe

⁴² https://github.com/city-of-melbourne

⁴³ https://github.com/gccgisteam

⁴⁴ https://github.com/SunshineCoastCouncil

⁴⁵ https://linux.org.au/

⁴⁶ https://linux.org.au/get-involved/sub-committees/

⁴⁷ https://linux.org.au/lugs/

⁴⁸ https://govhack.org/

created for the organisation of events and hackathons promoting open source in and for the government sector.

- The Open Source Industry Australia (OSIA).⁴⁹ is a non-profit association that provides support for the use and implementation of OSS for the public and private sectors. It offers services such as referrals to providers of services of solutions, tendering and training on OSS. The association groups representatives of different organisations on a volunteer basis and elaborates case studies on the implementation of OSS tools by public institutions such as the National Archives of Australia.⁵⁰ and the local administration of Newstead, Victoria.⁵¹. In 2018.⁵², OSIA submitted a comment to the Digital Transformation Agency on the draft for the ICT procurement framework.⁵³, noting that although the document emphasised open standards, it also showed a preference for commercial off-the-shelf software.
- Salsa Digital ⁵⁴ is an open source company that provides services and products for government digitalisation. Open source is one of the expertise domains of the company, which focuses on promoting re-use and collaboration, and the adoption and development of best practices. The company has been involved with the whole-of-government platform GovCMS since 2015 and has co-created similar platforms for the states of Victoria, New South Wales, Queensland, and Western Australia. The company frequently publishes blog entries that reference the use of OSS. ⁵⁵ in the public sector and was involved in the DrupalGov. ⁵⁶ government specialist event.

Policy and legal framework

This section summarises the main open source software related policies and legal acts of the last ten years, including the first known milestone in this domain. The list is presented in a chronological order, starting from the most recent milestone.

• The Beyond Digital strategy ⁵⁷ of the New South Wales Government, released in 2019, focusses on providing citizens with data-based digital services. The development of these services is supported by the Digital Service Toolkit, a collection of selected tools and resources to help develop solutions within the help state administrations of the NSW Government. Open source code developed by other agencies is suggested as one of the resources to use when developing a digital service.

⁴⁹ https://www.osia.net.au/

⁵⁰ https://www.osia.net.au/case_study_national_archives.html

⁵¹ https://www.osia.net.au/case_study_newstead_victoria.html

We found no evidence of activity of the association since 2018

⁵³ https://www.osia.net.au/pdfs/osia_sub_201804_dta_rc4.pdfv

⁵⁴ https://salsadigital.com.au/

⁵⁵ https://salsadigital.com.au/insights?field_tags=108

⁵⁶ <u>https://drupalsouth.org/</u>

⁵⁷ https://www.digital.nsw.gov.au/beyond-digital/ministers-foreword

- In 2018 the Australian government presented the Digital Transformation Strategy.⁵⁸, which includes a roadmap.⁵⁹ of goals to achieve by 2025. One of the achieved goals was to develop a Digital Service Standard, which includes the best practices and principles for the development and implementation of digital services. The eighth criterion is focused on making source code open to reuse.⁶⁰ and several guidelines are presented to meet this standard. The request to make source code open by default can be confirmed as being met not only through the GitHub repositories.⁶¹ of the DTA, but also through the Australian Government Open Data.⁶² repositories.⁶³, the Department of Social Services.⁶⁴ repositories.⁶⁵, the Department of Agriculture, Water and the Environment.⁶⁶ repositories.⁶⁷ of the Geoscience Australia.⁶⁹ repositories.⁷⁰, the Department of Industry, Science Energy and Resources.⁷¹ repositories.⁷², IP Australia agency.⁷³ repositories.⁷⁴ and the National Library of Australia.⁷⁵ repositories.⁷⁶.
- In 2017, the IP Australia.⁷⁷ agency released the IP Australia and the Future of Intellectual Property report.⁷⁸, where offering more patents in open source and the increase of open source activities were identified the trends that will accompany the future of globalisation and digital transformation. These trends set the strategic path for IP Australia for the following 10 to 15 years.
- The Queensland Government DIGITAL1ST Strategy 2017-2021.⁷⁹ lists eight principles for the development of a digital government. "Principle 8: Experiment, learn and improve" mentions the importance of knowing when to use open source when developing new solutions.
- The Government Digital Strategy 2016-2019.80 of the Australian Central Territory highlighted the importance of collaboration as a principle for the development of the Digital Economy. The document states that collaboration can be achieved through sharing code as open source.

⁵⁸ https://www.dta.gov.au/digital-transformation-strategy

⁵⁹ https://www.dta.gov.au/dts-roadmap

⁶⁰ https://www.dta.gov.au/help-and-advice/digital-service-standard/digital-service-standard-criteria/8-make-source-code-open

⁶¹ https://github.com/govau

⁶² https://data.gov.au/

⁶³ https://github.com/datagovau

⁶⁴ https://www.dss.gov.au/

⁶⁵ https://github.com/dssgovaus

⁶⁶ http://environment.gov.au/

⁶⁷ https://github.com/envris

⁶⁸ https://github.com/gs-dawr

⁶⁹ http://www.ga.gov.au/

⁷⁰ https://github.com/GeoscienceAustralia

⁷¹ https://www.industry.gov.au/

⁷² https://github.com/innovationgovau

⁷³ https://www.ipaustralia.gov.au/

⁷⁴ https://github.com/IPAustralia

⁷⁵ https://www.nla.gov.au/

⁷⁶ https://github.com/nla

⁷⁷ https://www.ipaustralia.gov.au/

⁷⁸ https://www.ipaustralia.gov.au/sites/default/files/ip australia and the future of intellectual property.pdf

 $^{^{79}\ \}underline{\text{https://digital1st.initiatives.qld.gov.au/documents/digital-strategy.pdf}}$

⁸⁰ https://www.cmtedd.act.gov.au/ data/assets/pdf_file/0007/981952/ACT-Government-Digital-Strategy-2016-full.pdf

- The Information and Communication Technology (ICT) Strategy 2016-2020.81 of the Government of Western Australia includes 10 strategic principles for its successful implementation. In the eighth principle, government agencies are encouraged to reuse and adapt OSS solutions to respond to their business needs.
- The Australian Central Territory Government's Strategic Plan for ICT 2011-2015.82 included five objectives that served as the foundation for ICT investment during the selected period. Objective Two focused on improving "return on investment on public expenditure on ICT through implementing and sharing higher quality, more resilient systems", with the promotion of open source mentioned as a possible way to reach this objective.
- The Guide to Open Source Software for Australian Government Agencies.⁸³, released in 2011, followed the release of the Open Source Software policy of 2010. It introduces the definition of OSS, the most well-known models for development and support, the benefits and risks of using OSS and under what circumstances agencies should consider it. It includes the Open Source Policy of 2010 and a summary of the Guide to ICT Sourcing from 2007.
- The Open Source Software Policy approved in 2010.84 listed three core principles agencies of the Australian government should comply with when dealing with procurement processes for OSS as of March 2011. All types of available software should be considered by both the agencies and software suppliers during the procurement process and agencies were also invited to participate in OSS communities and engage with other countries and organisations on this subject.

Open source software initiatives

This section presents an overview of the main open source software related initiatives in Australia. The list is presented in a chronological order, starting with the most recent initiative.

- CovidSafe, 2020.⁸⁵: The Australian Government developed and released its COVID-19 contact tracing mobile application. The Digital Transformation Agency publicly released the source code.⁸⁶ to gather feedback and improve the application based on the issues raised by the community.
- Digital Earth Australia (DEA), 2017.87: DEA is a platform that uses spatial data and satellite images to detect physical changes in Australia. It was created by Geoscience Australia.88, the government's geoscience organisation, under the Australian Geoscience Data Cube project. The

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 $^{^{81}\ \}underline{\text{https://www.parliament.wa.gov.au/publications/tabledpapers.nsf/displaypaper/3914215afb73cc112672740b48257fd20052e83a/\$file/4215.pdf}$

⁸² https://www.yumpu.com/en/document/read/5614635/the-strategic-plan-for-ict-2011-15-act-government-chief-minister-

 $^{{\}tt 83} \ \underline{\sf https://www.ghdonline.org/uploads/AGuidetoOpenSourceSoftware.pdf}$

⁸⁴ https://www.yumpu.com/en/document/read/33887077/open-source-software-policy-australian-government-information-

⁸⁵ https://covidsafe.gov.au/index.html

⁸⁶ https://www.dta.gov.au/news/dta-publicly-releases-covidsafe-application-source-code

⁸⁷ https://www.ga.gov.au/dea

⁸⁸ https://www.ga.gov.au/

platform uses Open Data Cube.⁸⁹, an OSS solution developed through collaboration between Geoscience Australia, the Committee on Earth Observation Satellites (CEOS), United States Geological Survey (USGS), Commonwealth Scientific and Industrial Research Organisation (CSIRO), Catapult Satellite Applications, and the Analytical Mechanics Associates (AMA). The solution is currently being reused in the African Regional Data Cube and the Swiss Data Cube.

- Australian Antarctic Division, 2016.⁹⁰: The Australian Antarctic Division of the Department of Agriculture, Water and the Environment is the government body responsible for leading, coordinating and delivering the Australian Antarctic Program, through scientific operations and research projects. The code used for statistical computing, analysis, plotting and manipulating of biogeographical data is available in the repository.⁹¹ of the division.
- Digital Marketplace, 2016.⁹²: The Digital Transformation Agency of the Australian Government released an online marketplace for agencies and business looking for sourcing options that will respond to their digital needs.⁹³. The platform was built with OSS provided by their British counterpart, which allowed for a partnership between both countries through the sharing of backlogs.⁹⁴. The code used for its development can be found in the repository of both the former Digital Transformation Office (dissolved in 2016).⁹⁵ and the Digital Transformation Agency.⁹⁶.
- Digital Transformation Agency repository, 2016.97: The website of the government agency responsible for overseeing the development of digital services has its source files stored on a public repository.98, allowing for collaboration on the development and reuse of the solutions in other governmental agencies. The website is a Commonwealth record, and its development is being tracked through platforms such as Github, in line with the Archives Act 1983.99 and guidance from the National Archives of Australia.100.
- Electronic Superannuation Audit Tool, 2015. The Australian Taxation Office launched a digital tool that allows Self-Managed Superannuation Fund (SMSF) auditors to conduct tasks such as annual compliance audits. The source code has been shared publicly. 102.
- GovCMS, 2015. The GovCMS platform, managed by the Australian Government, centralises the tools for agencies that need a website for purposes such as running campaigns, online

⁸⁹ https://www.opendatacube.org/

⁹⁰ https://www.antarctica.gov.au/

⁹¹ https://github.com/AustralianAntarcticDivision

⁹² https://marketplace.service.gov.au/

⁹³ https://www.dta.gov.au/blogs/open-source-collaborating

⁹⁴ https://www.dta.gov.au/blogs/open-source-collaboration

⁹⁵ https://github.com/ausdto

⁹⁶ https://github.com/govau

⁹⁷ https://www.dta.gov.au/

⁹⁸ https://github.com/govau

⁹⁹ https://www.legislation.gov.au/Details/C2016C00772

¹⁰⁰ https://www.naa.gov.au/information-management/disposing-information/transferring-information/archiving-australian-government-websites

¹⁰¹ https://www.ato.gov.au/Calculators-and-tools/Electronic-super-audit-

 $[\]underline{tool/\#:} \sim : text = The \%20 electronic \%20 superannuation \%20 audit \%20 tool, report \%20 (ACR) \%20 when \%20 required.$

https://www.ato.gov.au/Calculators-and-tools/Electronic-Superannuation-Audit-Tool-user-licence-agreement/?page=11

https://www.govcms.gov.au/

catalogues, or setting up corporate, ministerial, and service-based web pages. GovCMS offers solutions such as management systems and hosting solutions based on Drupal. The code is shared in public repositories. Over 300 websites were launched with the aid of GovCMS, with agencies such as the Department of Health, Services Australia and the Department of Defence – Army benefitting from these services. 105.

- Locate, 2015. 106: Locate is a map viewer developed by the Western Australia's land information authority. The map provides users with aerial photography and other property information that can be layered with information on public infrastructure, facilities, and census data from government sources. Developers are offered access to the resources used in the platform such as the list of layers and API. 107.
- Commonwealth Scientific and Industrial Research Organisation (CSIRO) Open Source Software License, 2014. CSIRO is Australia's publicly funded national agency responsible for conducting environmental and technological scientific research. The agency has released its specific OSS license and has launched Data61. Open a digital research network that partners with the government, industry, and students to help create new technology-based industries in Australia. The Data61 business unit developed Workplace. Open a free computer software that streamlines collaboration and software reuse for scientific purposes by powering different applications.
- NationalMap, 2014.¹¹¹: The NationalMap is an online map that aggregates open spatial data from Australian government agencies, facilitating the access to and release of information stored in different open data platforms and equipping policymakers with the necessary tools for evidence-based decision-making. It is currently managed by the DTA.
- CKAN in open data platforms, 2013. The federal government. 113, the government states of New South Wales. 114, Queensland. 115, Tasmania. 116, South Australia. 117, Victoria. 118, Western Australia. 119, the Australian Capital Territory. 120 and several agencies and municipalities. 121 have

¹⁰⁴ https://github.com/govCMS

https://www.govcms.gov.au/why-govcms

¹⁰⁶ https://maps.slip.wa.gov.au/landgate/locate/

¹⁰⁷ https://github.com/Landgate/Locate

¹⁰⁸ https://confluence.csiro.au/pages/viewpage.action?pageId=267124796

¹⁰⁹ https://data61.csiro.au/

https://research.csiro.au/workspace/

¹¹¹ https://nationalmap.gov.au/

https://pmc.gov.au/public-data/open-data

¹¹³ https://data.gov.au/

https://data.nsw.gov.au/

https://www.data.qld.gov.au/

https://www.thelist.tas.gov.au/app/content/data

¹¹⁷ https://data.sa.gov.au/

¹¹⁸ https://www.data.vic.gov.au/about-datavic

https://catalogue.data.wa.gov.au/

¹²⁰ https://www.data.act.gov.au/

¹²¹ https://github.com/ODIQueensland/Australian-Open-Data-Portals/blob/master/datapackage/data/australian-open-data-portals.csv

launched open data platforms that use CKAN. CKAN. ¹²² is an OSS solution used by several governments to build their open data platforms, facilitating the management and display of data.

- Climate Data for the Environment (CliDE), 2011. 123: The Bureau of Meteorology. 124 developed CliDE as part of the Pacific Climate Change Science Program. CliDe is an OSS solution that provided a central database of climate records for countries in the Asia-Pacific region. It is a tool for the simplified management and analysis of data for monitoring of weather variations and the management of the potential risks observed through the software.
- Atlas of Living Australia, 2006. ¹²⁵: Atlas of Living Australia is an open IT infrastructure that gathers biodiversity data from various sources for easy access and reuse. It is funded by the government through the National Collaborative Research Infrastructure Strategy. ¹²⁶ and the Commonwealth Scientific and Industrial Research Organisation. ¹²⁷ is responsible for the development of the platform. Developers who wish to engage with the code developed and used by the ALA can find numerous repositories. ¹²⁸ for the management and collection of data on Australian biodiversity.

¹²² https://ckan.org/

http://www.bom.gov.au/climate/pacific/about-clide.shtml

¹²⁴ http://www.bom.gov.au/

https://www.ala.org.au/#tab_pane-A

https://www.education.gov.au/national-collaborative-research-infrastructure-strategy-ncris

¹²⁷ https://www.csiro.au/

¹²⁸ https://github.com/AtlasOfLivingAustralia

