TECH POLICY DESIGN INSTITUTE

JUNE 2026

2025 AUSTRALIA'S AI AGENCY ASSESSMENT

About the Tech Policy Design Institute (TPDi)

TPDi is an independent, non-partisan think tank committed to advancing best practice technology policy in Australia and globally. Based in Canberra, TPDi is registered as a not-for-profit with the Australian Charities and Not-for-Profit Commission.

TPDi collaborates with all stakeholders in the tech ecosystem.

Our mission is to shape technology for the benefit of humanity through rigorous research, innovative education, evidence-based public commentary, and community building.

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Authors

Zoe Jay Hawkins, Co-Founder and Deputy Executive Director, TPDi; Research Associate, Oxford Internet Institute

Johanna Weaver, Co-Founder and Executive Director, TPDi

Rebecca Razavi, Visiting Policy Fellow, Oxford Internet Institute; Executive Director, UNSW Public Policy Institute

Meredith Hodgman, Head of Strategy and Engagement, TPDi

Vili Lehdonvirta, Professor of Technology Policy, Aalto University; Senior Fellow, Oxford Internet Institute

Mercedes Page, Visiting Scholar, Massachusetts Institute of Technology Sloan School of Management and Murray Lab

With invaluable contributions from Dorina Wittmann, Heidi Brockway and Helen Portillo-Castro.

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Contact

Tech Policy Design Institute
www.techpolicy.au
hello@techpolicy.au

ABN: 94 681 576 394

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We acknowledge the Ngunnawal and Ngambri people who are the Traditional Owners of the land upon which this report was prepared in Canberra, Australia. We pay our respects to Elders past and present.

The authors affirm that sovereignty has never been ceded by First Nations peoples living on the continent now known as Australia. We recognise Indigenous Sovereignty as enduring and inherent, as well as fundamentally different to the new concept of 'AI sovereignty' (to which this report is responding).

FOREWORD

Everyone, it seems, *wants* 'AI sovereignty'. But what most need is 'agency' to shape their future.

The term 'AI sovereignty' dominates policy discussions and drives investment decisions but is used to mean everything from strategic self-reliance to cultural preservation and individual autonomy. Its use as a binary – where AI is sovereign, or it is not – leaves most countries disempowered. There are also more practical confusions. AI is not one thing, so exactly what AI capabilities are we talking about? How do you measure them? What would sovereignty really mean in each case?

Since we published our discussion paper in November 2025, From *AI Sovereignty to AI Agency*, the debate has gained momentum. Binary notions of AI and sovereignty are increasingly seen as reductive in today's strategic landscape. Indeed, it is increasingly accepted that, for most countries, pursuing absolute AI sovereignty is an unattainable, and frankly unhelpful, goal.

TPDi's AI Agency Tool, presented here in its final form, offers a practical solution. Instead of only asking if a country possesses sovereign control, the tool assesses whether a country has AI agency to steer outcomes, protect and promote national interests, and capture value in a globally connected system.

The tool was informed by consultation with more than 250 experts across government, industry, research and civil society. It breaks down 'AI' into 103 possible AI capabilities. It provides a structured method to assess the maturity of each capability, maps the capability on a sovereignty spectrum (that spans access, control, choice and leverage), and considers the global scarcity of each capability. These assessments are then combined into a single view to arrive at an AI agency score.

We applied the tool here to produce ***Australia's 2025 AI Agency Assessment*: the first comprehensive, independent, evidence-based, expert-led assessment of Australia's AI capabilities at the national level.** We then mapped this assessment against the government's 2025 National AI Plan.

This assessment finds that Australia has emerging maturity across most AI capabilities, but high agency. Empirically, this means Australia has the power to shape the impact of AI on our future – if we make the right strategic decisions today.

> We are well-placed in physical AI infrastructure, data assets and applications. The most significant opportunities are in compute infrastructure; unlocking data assets through lifecycle capabilities; some models, including computer vision; and cross-cutting enablers such as skills, trust and inclusion.

The aim is not to control or excel in all 103 capabilities – but, rather, to understand our strengths, reduce critical dependencies, and build leverage where national advantages exist. **The AI Agency Tool provides an evidence-based framework to do this, grounded in data rather than instinct or spin.**

The tool is adaptable and scalable. The right mix of strategic capabilities will differ country to country. Like a music mixing deck, the tool brings together many different inputs into one frame, empowering the user to adjust the composition, and leverage the instruments at hand to shape the most impactful song.

We invite you to apply the tool so that your country, region, sector, community or organisation can identify your agency and help to proactively shape a technology that is already shaping our world.

Johanna Weaver

Johanna Weaver
Co-Founder
Tech Policy Design Institute

Zoe Jay Hawkins

Zoe Jay Hawkins
Co-Founder
Tech Policy Design Institute

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OVERVIEW: AI AGENCY TOOL

AI is reshaping global power, prosperity and security but debates about AI sovereignty are often binary, conflated, lacking evidence, and disconnected from the complex trade-offs leaders face.

What is it?

The AI Agency Tool is a structured and repeatable method to assess a nation's AI maturity, sovereignty and agency across 103 AI capabilities, producing prioritised recommended actions.

Why does it matter?

The tool equips decision-makers to pursue AI agency: the capacity to steer outcomes, protect and promote national interests, and capture value in a globally connected system. Used well, the tool enables nuanced strategies, better-targeted investment, and deeper understandings of trade-offs.

Who is it for?

- **Policymakers** of countries of all sizes and stages of AI maturity, particularly where strategic dependence is high, and choices are constrained
- **Business leaders** navigating geopolitical risk, supply chains and long-term investment decisions
- **Researchers** conducting national assessments, tracking progress over time and holding governments accountable

What does the tool do?

The tool presents a step-by-step process to gather evidence and make assessments to both inform and analyse strategy. Part 2 of the companion report describes in detail how to use the tool. Table 1 summarises its 3 steps and 6 outcomes. Figure 1 explains the concepts in the tool.

Tool applications

- Measure national AI agency over time via an updated, interactive AI Agency Tool
- Develop national strategies that leverage high agency capabilities (which represent national competitive advantages) to offset international dependency in other capabilities
- Compare AI maturity, sovereignty, agency and recommended actions across countries, for international benchmarking
- Conduct regional AI agency assessments and strategy development (for example, at the European Union level)
- Conduct organisational AI agency assessments and strategy development (for example, large enterprises)
- Undertake market concentration analysis for regulatory bodies

Table 1: Uses of the AI Agency Tool

Step	Use	Function	Outcome
1 **Define**	**A common language**	Defines 103 AI capabilities across 6 layers: **the typology**	**Shared language** that brings precision and comparability to national debates
2 **Assess today**	**Assess maturity**	**Stocktakes** current capability across the 6 layers and 103 capabilities	**Maturity ratings** that produce a curated snapshot of existing national strengths, areas for development and missing information
	Assess sovereignty	Maps international access, sovereign control, resilient choice and export leverage over AI capabilities through the **sovereignty spectrum**	**Sovereignty ratings** that move from a binary notion of sovereignty to a nuanced spectrum of sovereignty, delivering greater optionality for decision-makers
	Identify agency	Integrates maturity and sovereignty ratings, and global scarcity, into a single view in the **agency score**	Areas of **competitive advantage** that can be leveraged to compensate for areas of greater dependency
3 **Prioritise tomorrow**	**Plan next steps**	Combines maturity, sovereignty, agency, scarcity and public interest considerations to identify **recommended actions**	**Transparent disclosure** of analysis that underpins identification of most important areas for future attention
	Inform and analyse strategy	Connects all components into one **coherent policy design and assessment** method	**Grounds decisions in evidence.** Comprehensive national strategies. Strengthens accountability, and trust

AI TYPOLOGY

6 layers and 103 capabilities

The tool's typology sits across the entire AI ecosystem, defined here as a system of 6 layers.

Before you can assess national AI capabilities, you need to define them.

In AI policy, stakeholders often talk past one another, using the same terms to mean very different things. Without specific shared language, policymakers risk undervaluing entire segments. By distinguishing between fields – such as computer vision, forecasting, optimisation and generative AI – it becomes easier to see where strengths and emerging capabilities lie.

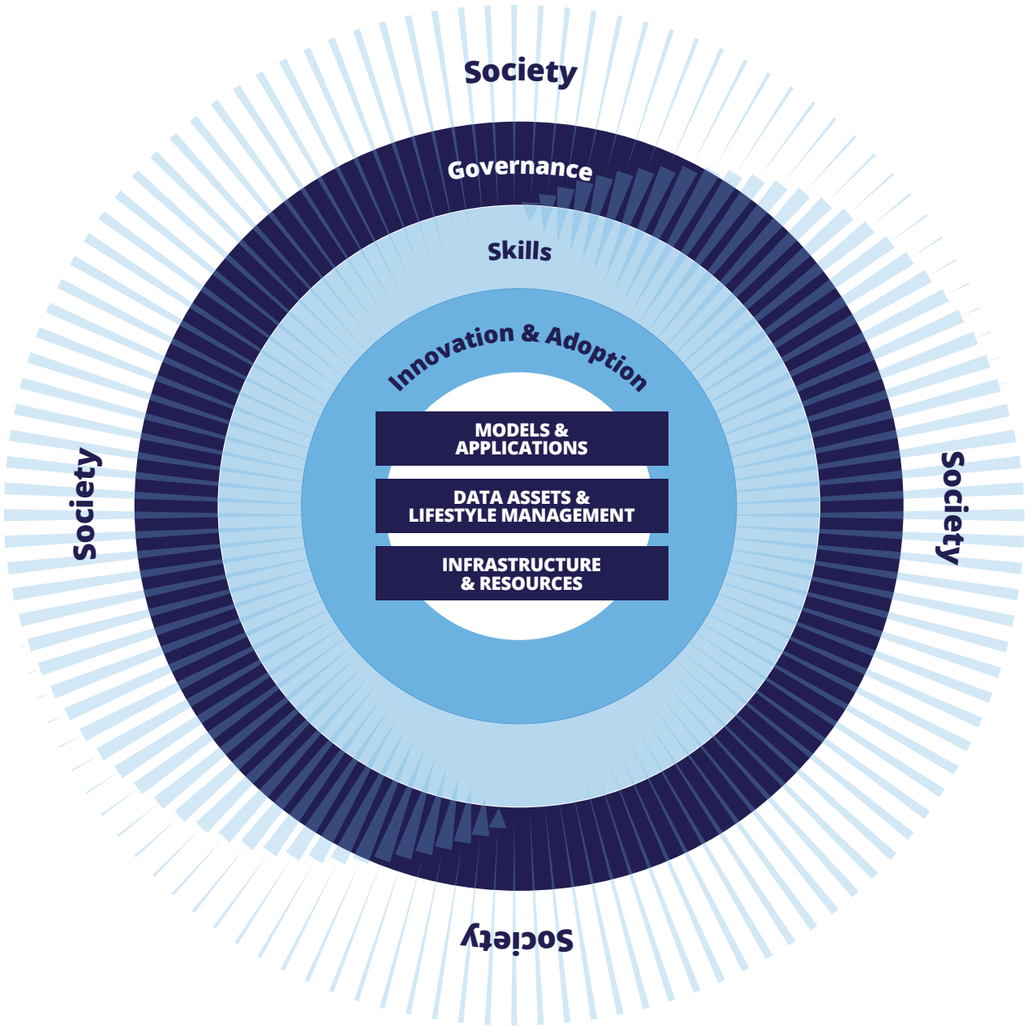
The AI Typology brings clarity by defining national AI capability, giving policymakers and practitioners a shared language.

Developed in consultation with over 250 experts, the typology defines the AI ecosystem as a system of 103 capabilities across 6 layers:

- 3 technical layers that form the AI stack (infrastructure and resources; data assets and lifecycle management; and models and applications)
- 3 enabling layers that encircle it (innovation and adoption; skills; and governance) (Figure 1).

These layers work as a complex system. Data powers models, governance shapes adoption, and skills determine how safely AI is used. Each layer is deeply intertwined with the others and with society itself. When aligned, they amplify progress; when disconnected, they slow it down.

Figure 1: The 6 layers of the AI typology



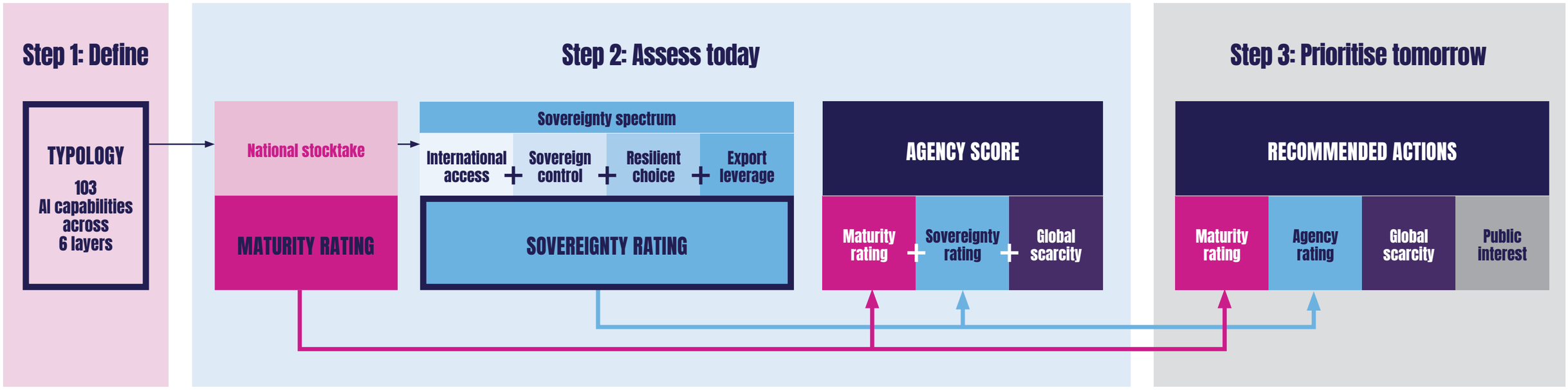
OVERVIEW: NATIONAL AI AGENCY ASSESSMENT PROCESS

The AI Agency Tool starts by conducting a national stocktake to produce a **maturity rating** for all 103 AI capabilities in the **AI typology**.

It then situates the traditional binary objective of *sovereign control* over those capabilities within an expanded spectrum that is fit for purpose in today's strategic landscape. The traditional control framing is expanded to also consider the management of international partnerships (*access*), the importance of resilience (*choice*) and pursuit of competitive advantage (*leverage*). We call this the **sovereignty spectrum**. An assessment of each element of the spectrum produces a *sovereignty rating*. The maturity and sovereignty ratings, and an assessment of a capability's global scarcity, are then combined into a single view to produce an **AI agency score** – a measure of national competitive advantage for each AI capability.

The final step of the Tool produces **recommended actions** by combining maturity, sovereignty, scarcity and subjective considerations of public interest importance. This enables leaders to prioritise next steps and maximise international leverage where agency is high, or to close critical gaps in the public interest.

Figure 2: Concepts and steps of the AI Agency Tool, including the AI typology, maturity rating, sovereignty rating, agency score and recommended actions



STEP 1

Define

The AI Typology: defining 103 national AI capabilities

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STEP 2

Assess today

The maturity rating: a national stocktake

To make informed policy choices, you first need to know where you stand. The stocktake consolidates evidence to measure maturity across all 103 capabilities in the typology. It brings together fragmented evaluations of the AI ecosystem into a single comparable picture. The tool provides the framework to collate credible insights, and highlights areas that are under-evaluated or poorly measured.

Conducting the stocktake produces a **maturity rating** for each AI capability, revealing whether a capability is established, emerging or advanced.

Importantly, the stocktake is descriptive, not prescriptive. Measuring a capability's existence or maturity does not imply:

1. **a value judgement** – whether having more or less of a capability is inherently good or bad
2. **a fixed trajectory** – some capabilities may plateau, evolve or become obsolete as technologies and business models change
3. **uniform maturity** – capability levels vary widely across sectors. Additionally, some areas that appear less mature may be globally scarce, creating leverage and strategic advantage.

In the tool:

- the stocktake appears in the **pink section** of the assessment below
- supporting data and references can be found in each layer's corresponding 'stocktake sheet'.

The sovereignty rating: spectrum, not binary

The AI sovereignty spectrum breaks down the traditional sovereignty binary into a measurable sovereignty rating for each capability.

TPDi's **sovereignty spectrum** situates the traditional binary objective of *sovereign control* within an expanded spectrum that is fit for purpose in today's strategic landscape. The traditional **control** framing is expanded to also consider the management of international partnerships (**access**), the importance of resilience (**choice**), and pursuit of competitive advantage (**leverage**). An assessment of each element of the spectrum produces a **sovereignty rating**.

The spectrum recognises that power comes from balance, building domestic strength while using interdependence as a source of agency. It consists of 4 elements: international access, sovereign control, resilient choice and export leverage. The sovereignty rating is higher when more of these elements apply to a capability.

The spectrum captures the overlapping capability ownership models that co-exist within a country (international, private, public and hybrid). Rather than presenting these as distinct capability rows, the tool layers and weights these relationships to reveal the cumulative strategic landscape in a compact and succinct way.

International access

Access defines a country's ability to utilise and benefit from international capabilities made available within its jurisdiction (for example, foreign models, cloud, chips). Under these conditions, a country can participate in and benefit from AI capabilities. But that country may be dependent on others and have limited ability to shape others' behaviour. In a globally networked AI economy, access can both be a strength and a vulnerability. Total dependence on foreign systems for critical functions risks exposure to external pressure, while strategic, diversified partnerships can create resilience.

The sovereignty spectrum distinguishes between types of access. For instance, a country may gain access to AI capabilities from jurisdictions that are governed by the *rule of law* or those where authority is exercised *extrajudicially*, such as leaders whose decisions are not subject to independent or judicial review. While both increase agency by increasing choice and resilience, access via rule-of-law jurisdictions is worth twice as many points in the model to reflect its greater reliability.

For example, as it currently stands, access to international capabilities from China or Hong Kong would be represented in the 'extrajudicial reach' column, while those from Five Eyes countries would be noted in the rule-of-law column. However, **none of these classifications are set and forget**. The benefit of this tool is in its ability to be adjusted, increasing or decreasing sovereignty in line with changes in national capability or geopolitical circumstances (for example, if a rule-of-law country suddenly became subject to extrajudicial reach).

Sovereign control

The traditional conceptualisation of 'AI sovereignty' is carried forward most directly in the category of 'control'. Control refers to a country's domestic ownership and authority over key capabilities within its jurisdiction. Control captures AI capabilities that are onshore and subject to a government's ability to directly compel actors within its jurisdiction – whether research institutions, civil society or private enterprise – to act a certain way. Different governments will have different preferences regarding the level of domestic control, in part depending on the capability's strategic importance.

STEP 3

Assess today (continued)

For example, public interest compute, regulation or AI safety research may warrant direct domestic stewardship, while commercial applications may be more suited to mixed ownership models.

In this manner, having 'control' may mean that public interest research organisations possess their own AI compute training resources, and that domestic AI companies are being established and grown; or that government has control of a capability (for example, regulation).

Defining what constitutes a 'local business' is often contentious. For consistency, this application of the tool uses the Australian Government's definition of an Australian business for procurement purposes.

> **An Australian business** is 'a business, including any parent business, that has 50% or more Australian ownership, or is principally traded on an Australian equities market; and is an Australian resident for tax purposes; and is a business that has its principal place of business in Australia.'

Articulating the gradient of national control is complex and central to AI sovereignty debates. The AI Agency Tool's sovereignty spectrum provides a structured way to articulate and measure these differences.

Resilient choice

Choice refers to the ability to manage unavoidable dependencies on others' capabilities through a mix of international and sovereign capability. It is the product of a balance of access and control. Choice involves having diversity in access to capabilities, and the resilience to sustain continuity of capability under disruption. A diverse and well-managed mix of capability sources creates flexibility, enabling fast pivots under pressure, and self-determination and adaptation as required.

In this manner, cumulative choice aids sovereignty: the broader the options, the stronger a nation's resilience and independence.

Export leverage

Leverage refers to having excess capability domestically and/or others depending on your AI capabilities in foreign jurisdictions. This enables governments to shape outcomes and what others do, with or without direct coercion, by leveraging dependencies across a globally connected system. If international partners rely on a country's capability for their own AI ecosystem, this creates further leverage, bolstering the national negotiating position to secure or maintain access to other essential capabilities. Such dependencies amplify negotiating power and position a country as an indispensable partner in the global system.

For example, leverage may involve other countries depending on one nation for the supply of critical and strategic minerals that underpin AI technologies, or commercial applications made in one country but being used in international markets, or one country training another country's population in particular AI-related skills.

In the tool:

- the AI sovereignty spectrum appears in the **blue section** of the assessment below
- each layer applies the elements of the spectrum within its own context differently (for example, accessing infrastructure versus accessing skills). The logic remains constant: the sovereignty rating increases when access, control, choice and leverage are collectively as high as possible.

AI agency score: identifying competitive advantage

> **'AI agency'** is a nation's power to shape its AI future. It is the capacity to steer outcomes, protect and promote national interests, and capture value in a globally connected technological system. It is determined by the strength of its AI capabilities (*maturity*), its capacity to access, control, choose and leverage the capabilities (*sovereignty spectrum*), and the scarcity of those capabilities worldwide. It shows not just what a nation can do, but how independently it can act, and the leverage it gains when others depend on its strengths.

Power is not derived from capability alone. The AI agency score integrates the maturity, sovereignty, and global scarcity of a country's capability. It measures not only what a country can do, but how rare that ability is in an international context. This allows the tool to highlight where a country may possess strategic leverage.

- Maturity rating: current capability levels, drawn from the stocktake (pink column)
- Sovereignty rating: access, control, choice and leverage drawn from the sovereignty spectrum (blue column)
- Scarcity: how common or rare the capability is globally, identifying potential sources of strategic advantage (which diminish in line with the number of alternate sources of that capability)

Scores are weighted to emphasise capability over scarcity, combining maturity and sovereignty (up to 12 points) with relative global scarcity (up to 3 points) for a total possible score of 15.

In the tool:

- the AI agency score appears in the **purple section** of the assessment below on the far right of the 'Assess today' section.

Prioritise tomorrow

Recommended actions: decision-makers tool

The final step in the AI Agency Tool enables decision-makers to look ahead, showing where agency should be fostered next through recommended actions.

Recommended actions are best next steps based on a capability's current maturity rating, sovereignty rating, global scarcity and public interest considerations. Recommendations range from building advantage for international leverage, to closing critical gaps in the public interest, and maintaining and monitoring existing advantage.

- **Public interest:** is the only normative assessment in the tool. It considers the public importance of increasing AI agency in a particular capability.
- In *Australia's 2025 AI Agency Assessment*, the public interest assessment was completed by TPDi (prioritising capabilities that support 'People & Planet', as defined in TPDi's report *Tetris for Australia's Future*). Different actors will disagree with TPDi's assessment of public interest, and that is the point. The score invites scrutiny and transparency by making explicit the value judgments that are embedded in decision-making processes, opening them to interrogation and challenge.

Taken together, the recommended actions help decision-makers prioritise their finite resources. They also reveal how agency in certain capabilities should be leveraged to secure international access to other capabilities where there is lower national agency.

In the tool:

- the recommended actions appear in the **dark grey** section of the assessment below.

With these steps combined, the AI Agency Tool helps decision-makers to identify what they have, where to build, where to partner and where to lead, reinforcing the shift from a binary concept of sovereignty to a dynamic concept of AI agency.

OVERVIEW: AUSTRALIA'S 2025 AI AGENCY ASSESSMENT & NATIONAL PLAN

Australia's 2025 AI Agency Assessment is the first application of the AI Agency Tool. It assesses Australia's AI maturity, sovereignty, agency (as at December 2025), and produces recommended actions across 103 capabilities. We then mapped the Australian Government's 2025 National AI Plan against the assessment.

Australia's assessment

Australia has emerging AI maturity but high AI sovereignty and high AI agency.

The assessment reveals:

- **Australia predominantly has emerging maturity in AI capability** with 51 of 103 AI capabilities found to be emerging, 33 are established, with only 11 advanced and 2 with no maturity at all (6 not enough data)
- **Australia's AI sovereignty is predominantly high**, with 85 capabilities assessed as high sovereignty and 15 as medium, with only 2 at low (1 not enough data)
- When also factoring in how globally scarce capabilities are, **Australia's agency is high**:
  58 are high, 29 moderate, and 8 very high agency, with only 2 scoring low (6 not enough data).

Australia has the baseline AI maturity and sovereignty required to increase our AI agency – provided that we strategically prioritise.

Australia is well placed to build and leverage our areas of competitive advantage in our national interests. The assessment provides the independent, expert-led, evidence base to inform such prioritisation. We have the power to shape our AI trajectory, we just need to use it.

The assessment found Australia has 8 capabilities that fall within the highest band: very high agency.

This includes:

- our rich endowment in strategic and critical minerals
- 5 domain specific datasets (medical, geospatial, environment and resources, demographic and infrastructure)
- our expertise in developing computer vision models
- our proven impact in international engagement (influence and norm shaping).

The assessment found only 2 capabilities in which Australia has the lowest level of agency, these being manufacturing and packaging of accelerators (AI chips).

AI Plan analysis

TPDi's analysis compares recommended actions in the assessment against the government's commitments in the National AI Plan. Across the 103 AI capabilities, the analysis shows:

- 44 government commitments align with recommended actions in the assessment
- 20 misalign where there is agency to be built and leveraged
- 28 misalign where there is a critical gap to close
- 5 require greater coordination to better harness agency
- 6 require more evidence to make a proper assessment.

Every significant commitment in the National AI Plan aligns with the assessment's recommendations.

Governments have finite resources and must make tough decisions about what to prioritise. **It is noteworthy that the plan is strongly aligned with the assessment's findings on where Australia should leverage, build or maintain agency.** The plan's major commitments focus on areas where Australia already possesses meaningful maturity and agency. This includes:

- data centres and supporting infrastructure
- public cloud
- general AI applications
- government and small to medium enterprise (SME) adoption
- international engagement.

Leaning into these capabilities harnesses existing strengths while also offering enabling benefits across the whole ecosystem.

Strategic silences in the National AI Plan align with areas of low national agency.

Not all omissions from the plan should be viewed as gaps. For many capabilities the assessment's recommended action is 'maintain and monitor'. Many of the areas receiving limited attention in the plan fall into this category. They are capabilities where Australia currently has low maturity and low agency, or where government intervention is less necessary. This includes:

- accelerator manufacturing
- frontier model development
- most forms of private-sector AI capability.

The government has reasonably adopted a targeted approach in the plan, focusing public investment on what the government has assessed to be foundational capabilities while allowing the private sector to lead where appropriate.

There is untapped potential in Australia's highest agency capabilities.

While the plan establishes strong foundations, it does not fully capitalise on all of Australia's areas of highest agency – the capabilities in which Australia has competitive advantage. The assessment identifies opportunities to better leverage Australia's strengths in critical minerals, strategic data assets and model development in computer vision. These are areas where Australia already possesses very high agency and which could be used more deliberately to strengthen national capability, address weaknesses and close critical gaps elsewhere in the AI ecosystem, while increasing Australia's international leverage.

There are critical gaps to close.

The assessment also identifies several globally scarce capabilities that are important to the public interest but remain underdeveloped in Australia – these capabilities should be the focus of the next wave of government prioritisation. This includes:

- public sector and public interest compute infrastructure
- key data lifecycle management capabilities (such as copyright, sourcing, validation and annotation)
- culturally and national inclusive models
- discerning, inclusive, and trusted AI adoption
- general AI literacy
- several specialised AI skills
- regulatory and oversight capability.

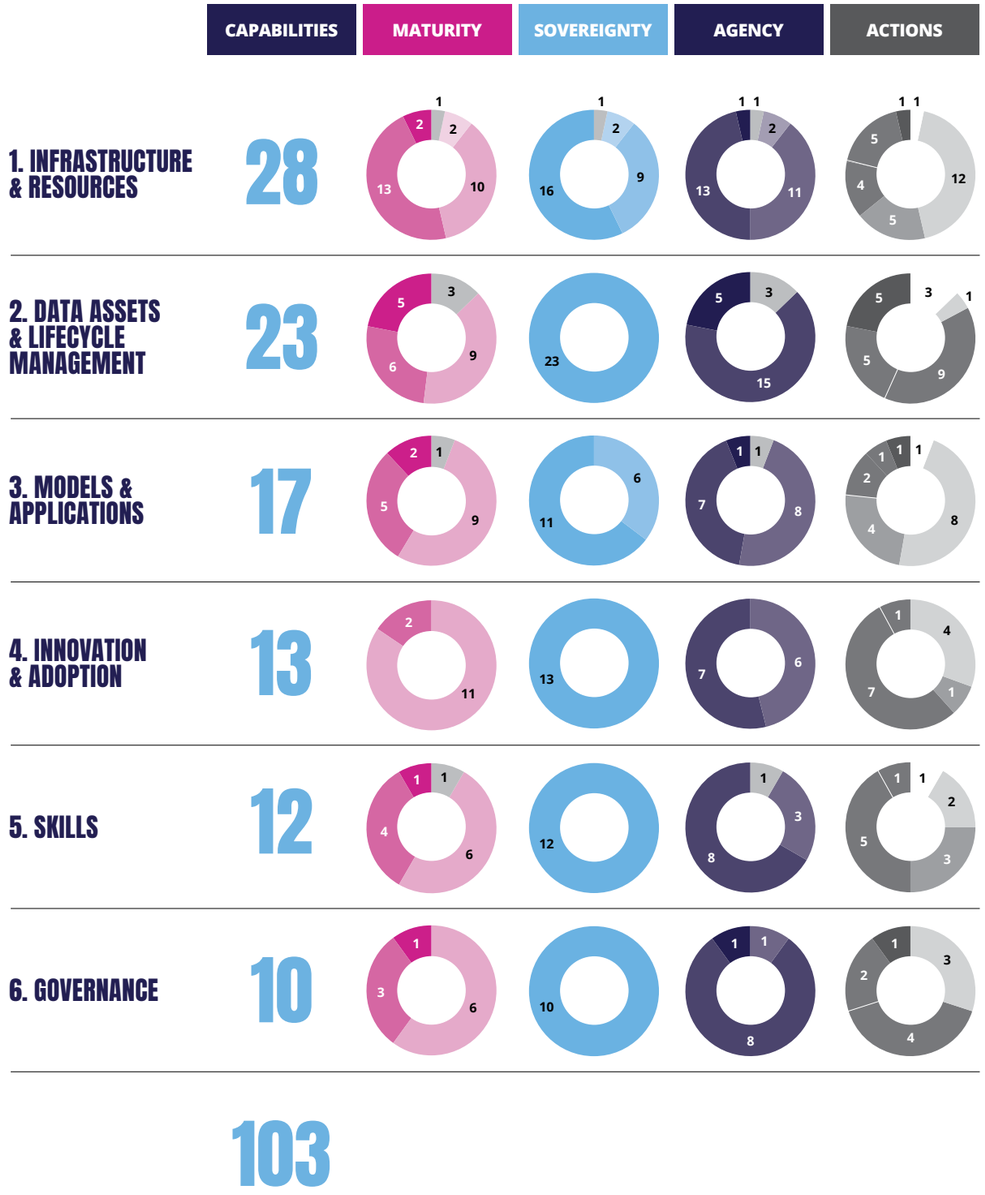
Addressing these gaps would strengthen Australia's ability to support innovation, research, public services and national resilience, while ensuring AI systems reflect Australian values, cultures and identities and, perhaps most importantly, ensure that the benefits of AI are widely distributed.

To view the mapping of the assessment against the plan, please find TPDi's *Analysis of Australia's 2025 AI Agency Assessment and the Australia Government's 2025 National AI Plan* at techpolicy.au/aiagency.

AUSTRALIA'S 2025 AI AGENCY ASSESSMENT

This document sets out the detailed findings of Australia's 2025 AI Agency Assessment. As the first application of the AI Agency Tool, this assessment reveals Australia's AI maturity, sovereignty, agency and recommended actions across 103 AI capabilities.

Figure 3: High-level view of the assessment findings across the 6 ecosystem layers



Key to the assessment table

Assess today

Maturity rating

Existence and sophistication of specific capability in the jurisdiction, based on national stocktake of existing assessments

Not enough data	**(0)**
No maturity – no identifiable capability	**(0)**
Emerging – early signs of progress towards some capability	**(2)**
Established – capability exists (quality variable)	**(4)**
Advanced – high-quality capability exists and is widely available	**(6)**

Sovereignty rating

Derived from a weighted sovereignty spectrum taking into account extent of international access, sovereign control, resilient choice and export leverage for each capability

None – zero on spectrum	**(0)**
Not enough data	**(0)**
Low – up to one third of boxes on spectrum	**(2)**
Medium – half of boxes on spectrum	**(4)**
High – more than two thirds of boxes on spectrum	**(6)**

Global scarcity

How common or rare the capability is globally, identifying potential sources of strategic advantage (which diminishes in line with the number of alternate sources of that capability)

Most countries	**(0)**
Many countries	**(1)**
Few countries	**(2)**
Very few countries	**(3)**

Agency score

Objective competitive advantage a country has over a capability, based on compilation of maturity rating, sovereignty rating and the scarcity of that capability globally

Maturity and sovereignty are the primary determinants of advantage (both scored out of 6), while scarcity is a secondary factor (scored out of 3), for a total possible score of 15.

None	**0–1**
Very low	**2–4**
Low	**5–7**
Moderate	**8–10**
High	**11–13**
Very High	**14–15**

Prioritise tomorrow

Public interest

Normative assessment that considers the public importance of increasing AI gency in a particular capability

In this assessment TPDi prioritised capabilities that support 'People and Planet', as defined in TPDi's report *Tetris for Australia's Future*. Different actors will disagree with TPDi's assessment of public interest, and that is the point. The score invites scrutiny and transparency by making explicit the value judgments that are embedded in decision making processes, opening them to interrogation and challenge.

Public interest	**(1)**
High public interest	**(2)**

Recommended action

Strategic imperative to increase current agency over a capability, taking into account current maturity, sovereignty, scarcity and public interest (the latter of which is inherently subjective)

The recommended actions prioritise capabilities where agency should be increased, either to seize an international leadership opportunity, advance public interest or close a critical domestic gap. Taken together, the recommended actions aid prioritisation by revealing how agency in certain capabilities should be leveraged to secure international access to other capabilities where there is lower agency.

Gather more evidence – insufficient data.

Maintain & monitor – current agency is strategically appropriate. Continue monitoring for changes in the strategic environment that may require future adjustment.

Build – this is an opportunity to strengthen national agency in globally scarce capabilities, where some national maturity and sovereignty already exists. Consider additional targeted effort to increase international leverage and future flexibility.

Close critical gap – this is a significant domestic maturity gap in a globally scarce capability with high public interest value. Consider prioritised effort to reduce vulnerability and build baseline capability.

Prioritise building – this is a strategic opportunity to strengthen national advantage where national maturity is already advanced and agency is high, or where increasing national maturity in a globally scarce capability is in the public interest. Consider prioritised effort to increase both international leverage opportunities and domestic public interest outcomes.

Leverage & maintain – this is a capability of existing very high national agency, which should be maintained and leveraged internationally to offset gaps in other capabilities of low agency.

1 Infrastructure & resources

The physical underpinning of AI power (compute, data centres, supply chains and natural resources)

Define

AI typology — Common language to describe and measure different types of national AI capability

This layer assesses the physical underpinnings of AI power: national compute and data infrastructure, such as data centres, training and inferencing clusters, and data storage. It evaluates the hardware supply chain for AI, from strategic and critical minerals through extraction, refinement, and into accelerator design, fabrication and packaging, plus cross-border supply arrangements and other data centre hardware inputs. It covers supporting infrastructure and resources that determine where and how compute can be built and run at scale: clean electricity generation and transmission, broadband and research networks, subsea cables, water availability and usage, suitable land, and timely planning/approvals (including appropriate engagement with First Nations owners).

Assess today

Category I	Category II	Category III	Category IV	Definition	Examples (Not exhaustive, illustrative only)	Indicators	Maturity rating (Measures the existence and sophistication of specific capability in jurisdiction, based on stocktake of existing assessments)	Sovereignty rating: Sovereignty spectrum: access, control, choice or leverage over a capability. Sovereignty is calculated based on the proportion of boxes ticked out of the possible boxes for that row (excluding N/As) and converted into a standardised sovereignty rating						Agency score: Competitive advantage. What competitive advantage a country currently has based on the maturity of capability, sovereignty over that capability, and the scarcity of that capability globally	
							See stocktake sheet for this layer for source of maturity rating	Resilient choice — from a mix of international and sovereign capability: International access to capability within jurisdiction: Subject to extrajudicial reach (e.g. China) (half weighted)	Subject to Rule of law (e.g. UK) (full weight)	Sovereign control over capability within jurisdiction: Controlled by domestic business (full weight)	Controlled by domestic public interest organisation (full weight)	Controlled by the government (full weight)	Export leverage through export of capability: Used by other countries (full weight)	Sovereignty rating: Measures the proportion of international access, sovereign control, resilient choice and export leverage over a capability	Global scarcity: of capability on a global level (i.e. how many other countries have this capability?)	Agency score: Measures a country's strategic position in a given AI capability by combining the maturity of its capability, its sovereignty over that capability, and the scarcity of that capability on the global stage, into a single score
1.1 Compute & Data Infrastructure	1.1.1 Data Centres			The secure, efficient physical infrastructure, including cooling systems and redundant power, that houses and supports large-scale inferencing and training compute (defined below).	Equinix; CDC Data Centres; AirTrunk; NEXTDC; DCI Data Centres; Macquarie Data Centres.	• Mega Watt capacity on compute scale • Power Usage Effectiveness (PUE) on energy efficiency • Tier Certification (Uptime Institute) on reliability • Renewable energy share	Established (4)	–	✓	✓	✓	✓	✓	High (6)	Few countries (2)	High (12)
	1.1.2 Training Compute Large-scale computing power required to train AI models by processing large amounts of data over extended periods, housed within a data centre.	1.1.2.1 Private Sector Training Compute	1.1.2.1.1 Cloud Training Compute Infrastructure as a Service (public cloud)	Large-scale compute clusters made available locally as Infrastructure as a Service (IaaS). Individuals, companies or organisations can rent computing capacity remotely and on demand for AI model training, often using specialised chips (accelerators) such as Graphics Processing Units (GPUs) and Tensor Processing Units (TPUs).	Multinational hyperscalers (AWS, Google Cloud, Azure, Oracle Cloud). Local/regional AI cloud providers (e.g. Sharon AI).	• Number and scale of local cloud clusters • Availability and cluster sizes of advanced chips known as accelerators (such as GPUs like NVIDIA H100 or equivalents) • Approximate number of H100-equivalent accelerators	Established (4)	–	✓	✓	N/A	N/A	–	Medium (4)	Very few countries (3)	High (11)
			1.1.2.1.2 Private Training Compute Clusters	Dedicated training infrastructure owned and operated by companies for proprietary AI development (not available on demand). Typically used for confidential or long-term projects where compute cannot be shared or outsourced. May include in-house or dedicated, long-term private co-located compute supply in third-party data centres.	In-house clusters at technology firms, finance, defence, or pharmaceutical companies.	• Number of local clusters, number of accelerators • Total private compute capacity in H100 equivalents • Investment in private AI infrastructure	Emerging (2)	✓	✓	✓	N/A	N/A	–	High (6)	Very few countries (3)	High (11)
		1.1.2.2 Public Sector & Public Interest Training Compute	1.1.2.2.1 Public Sector & Public Interest AI Training Infrastructure	High Performance Computing (HPC) systems optimised for AI training, owned and operated by government, universities or research agencies. These systems may combine traditional Central Processing Unit (CPU) based HPC with AI accelerator enhanced architecture.	National laboratories, university HPC centres, scientific agencies' supercomputers (e.g. CSIRO's Virga).	• Number and scale of publicly owned AI training-capable HPC clusters • Availability and cluster sizes of accelerators • Number of H100-equivalent accelerators • Top500 /Top100 world rankings • Compute hours accessible to public interest research	Emerging (2)	N/A	N/A	N/A	✓	✓	–	Medium (4)	Very few countries (3)	Moderate (9)
			1.1.2.2.2 General-purpose Public Sector & Public Interest High-Performance Compute Infrastructure	National or institutional HPC systems supporting scientific, environmental and data-intensive computation, which indirectly enable AI by hosting data pre-processing, simulation or more validation tasks. This complements AI-specific infrastructure and ensures continuity of high-performance research capacity.	The National Computational Infrastructure (Gadi), Pawsey Supercomputing Research Centre (Setonix), and major university systems (e.g. UNSW Katana).	• Total system capacity (PetaFlops) • Proportion of workloads supporting AI-enabling tasks (e.g. simulation, data preparation)	Emerging (2)	N/A	N/A	N/A	✓	✓	–	Medium (4)	Very few countries (3)	Moderate (9)
			1.1.2.2.3 International Agreements for Cross-border Access to Training Compute	Bilateral or multilateral agreements enabling shared access to AI training compute infrastructure across national boundaries.	Europe Joint Undertaking, bilateral research agreements, research consortia with reciprocal compute access. Square Kilometre Array Observatory Treaty. Worldwide LHC Computing Grid.	• Number of active agreements • Guaranteed compute hours • Reciprocity terms and security terms	Emerging (2)	–	✓	N/A	✓	✓	✓	High (6)	Very few countries (3)	High (11)
	1.1.3 Inferencing Compute Computing power used to run pre-trained AI models in real time – processing new data to generate outputs, housed within a data centre.	1.1.3.1 Private Sector Inferencing Compute	1.1.3.1.1 Cloud Inferencing Compute Infrastructure as a Service (public cloud)	Cloud-based compute resources used to run AI models – rather than train them – offered as an on-demand commercial service. This includes national edge zones and micro data centres positioned close to the use case to reduce latency (time delay).	Multinational hyperscalers (AWS, Google Cloud, Azure, Oracle Cloud). Local/regional AI cloud providers (e.g. Sharon AI).	• Number and scale of local cloud clusters • Geographic distribution of inferencing capacity (relevant to latency) • Number of accelerators	Established (4)	–	✓	✓	N/A	N/A	✓	High (6)	Few countries (2)	High (12)
			1.1.3.1.2 Commercial Edge Inferencing Compute Deployments	Compute resources positioned close to data sources or end users/customers – such as telecommunications nodes or Internet of Things (IoT) networks – to enable rapid, low latency AI inferencing. Typically owned or managed by private firms.	Telecommunications providers deploying AI at network edges; logistics or manufacturing firms using local inferencing for automation.	• Number of commercial edge deployments • Coverage and density of edge compute sites (relevant to latency) • Volume of inferencing operations (per second)	Emerging (2)	✓	✓	✓	N/A	N/A	✓	High (6)	Few countries (2)	Moderate (10)
			1.1.3.1.3 Private Inferencing Compute Deployments	Dedicated inferencing infrastructure owned and operated by companies for ongoing operational use (not available on demand). Typically used for confidential or long-term projects where compute cannot be shared or outsourced. May include in-house or dedicated, long-term private co-located compute supply in third-party data centres.	Companies running in-house AI models, such as real-time recommendation engines, fraud detection or autonomous systems.	• Number of corporate inferencing clusters • Number of accelerators	Emerging (2)	✓	✓	✓	N/A	N/A	–	High (6)	Few countries (2)	Moderate (10)

Prioritise tomorrow

Decision-makers tool

Next steps

The recommended actions prioritise capabilities where agency should be increased, either to seize an international leadership opportunity, advance public interest, or close a critical domestic gap. Taken together, the recommended actions reveal how agency in certain capabilities should be leveraged to secure international access to other capabilities where there is lower agency.

Public interest (of *increasing* agency (a normative assessment, in this case completed by TPDi, prioritising capabilities that support 'People & Planet', as defined in TPDi's report *Tetris for Australia's Future*))	Recommended action (Indicates the recommended strategic approach by government and the private sector to this capability based on its current maturity, sovereignty, scarcity and public interest importance (the latter of which is inherently subjective))
Public interest (1)	Build
High public interest (2)	Prioritise building
Public interest (1)	Maintain & monitor
High public interest (2)	Close critical gap
High public interest (2)	Close critical gap
High public interest (2)	Close critical gap
High public interest (2)	Prioritise building
Public interest (1)	Maintain & monitor
Public interest (1)	Maintain & monitor

1 Infrastructure & resources

The physical underpinning of AI power (compute, data centres, supply chains and natural resources)

Define

AI typology — Common language to describe and measure different types of national AI capability

This layer assesses the physical underpinnings of AI power: national compute and data infrastructure, such as data centres, training and inferencing clusters, and data storage. It evaluates the hardware supply chain for AI, from strategic and critical minerals through extraction, refinement, and into accelerator design, fabrication and packaging, plus cross-border supply arrangements and other data centre hardware inputs. It covers supporting infrastructure and resources that determine where and how compute can be built and run at scale: clean electricity generation and transmission, broadband and research networks, subsea cables, water availability and usage, suitable land, and timely planning/approvals (including appropriate engagement with First Nations owners).

Category I	Category II	Category III	Category IV	Definition	Examples (Not exhaustive, illustrative only)	Indicators
1.1 Compute & Data Infrastructure	**1.1.3 Inferencing Compute** Computing power used to run pre-trained AI models in real time – processing new data to generate outputs, housed within a data centre.	**1.1.3.2 Public Sector & Public Interest Inferencing Compute**	**1.1.3.2.1 Public Sector & Public Interest Inferencing Compute Clusters**	Compute clusters equipped for large-scale public sector or public interest inferencing, typically used in research, environmental modelling or national security contexts, including HPC systems.	Bureau of Meteorology (BoM) – Cray/HPE supercomputing environment; National Computational Infrastructure (NCI); National Security HPC environment (e.g. Defence Supercomputing Capability).	• Number and scale of publicly owned inferencing-capable HPC clusters • Availability and cluster sizes of accelerators • Number of accelerators • Compute hours accessible to public interest research
			1.1.3.2.2 Public Sector & Public Interest Edge Inferencing Compute Deployments	Compute resources positioned close to end users/citizens enabling real-time AI decision-making for infrastructure, emergency management, or IoT sensor networks.	Smart city platforms, transport or energy system monitoring, public health sensor networks.	• Number of active public edge sites • Coverage (urban/rural) • Volume of inferencing operations (per second)
		1.1.3.3 Consumer or Personal AI Inferencing Devices		Everyday devices (e.g. smartphones, laptops) that perform on-device inferencing, typically using small or compressed models. While not significant for model training, these systems contribute to widespread AI use and local data processing.	Smartphones with on-device AI (e.g. image recognition, translation, home AI assistants).	• Market penetration of AI-capable consumer devices • Aggregate edge inferencing capacity in consumer market
	1.1.4 Data Storage Infrastructure			Infrastructure for storing, managing and transferring large-scale datasets required for AI model training and inferencing. Emphasises scalability, throughput, and high speed interconnects (e.g. InfiniBan) for data intensive workloads across research, government and industry.	Pawsey Supercomputer Research Centre (Acacia data store); CSIRO's Data Access Portal; AARNet CloudStor replacement.	• Petabytes (PB) of storage capacity – national data-holding capability • Data throughput (GB/s) speed of access and transfer • High speed interconnects (InfiniBand/Ethernet standards)
1.2 Hardware Supply Chain Non-exhaustive, focused on critical and limited hardware inputs for AI infrastructure.	**1.2.1 Strategic & Critical Minerals**	**1.2.1.1 Natural Resources**		In-ground reserves of minerals – including critical minerals (lithium, rare earth elements and tantalum) and strategic minerals (copper, high-purity silica) that underpin the production of accelerators and construction of data centres.	Deposits of minerals that can be used to support accelerator manufacturing such as Greenbushes tantalum deposit in Western Australia.	• Proven reserves (tonnes) • Share of global reserves • Number of minerals with active domestic projects
		1.2.1.2 Extraction		Mining and concentrating critical and strategic minerals into usable ores, with appropriate consultations and approvals from First Nations owners.	Mining operations extracting minerals from in-ground reserves for refinement and processing, such as Rio Tinto, Talison Lithium.	• Annual output (tonnes/year) • Export volumes vs domestic utilisation • Number of active extraction projects
		1.2.1.3 Refinement & Processing		Converting raw ores into high-purity materials (metals, oxides, rare-earth compounds) that can actually be used in accelerators and data centre construction.	Domestic refineries and smelters producing high-grade materials required for accelerators of construction of data centres, such as Lynas Rare Earths processing in Western Australia and Malaysia.	• Number of active extraction projects • Refinement throughput (tonnes/year)
	1.2.2 Producing Accelerators (AI Chips)	**1.2.2.1 Designing Accelerators** (Fabless)		Designing accelerator architectures using Electronic Design Automation (EDA) software. 'Fabless' means a company that designs accelerators but contracts out the fabrication (rather than owning and operating the manufacturing themselves).	Design firms developing AI accelerators, such as NVIDIA, d-Matrix, Broadcom, AMD.	• Number of local design teams • Number of AI-related patents held • R&D investment • Service agreements for offshore fabrication and packaging
		1.2.2.2 Manufacturing Accelerators		The physical fabrication and assembly and testing of the chips and memory units that power AI systems. This includes processes such as wafer production, photolithography, etching, doping, and component integration within fabrication plants (fabs).	Fabrication or packaging firms and facilities physically assembling accelerators, such as the Taiwan Semiconductor Manufacturing Company (TSMC).	• Number of units assembled or packaged annually • Number of companies or fabrication facilities • Semiconductor fabrication patents
		1.2.2.3 Packaging Accelerators		The post-fabrication stage where chips are tested, packaged, and assembled into modules or systems ready for integration into AI hardware. Packaging protects chips, enables electrical connectivity, and influences performance characteristics such as latency and thermal efficiency.	Packaging and testing firms and facilities, such as ASE Technology Holdings, Amkor Technology and JCET Group.	• Number of packaging and testing facilities operating domestically • Number of AI-grade chips packaged annually

Assess today

Maturity rating	Sovereignty rating							Agency score	
Measures the existence and sophistication of specific capability in jurisdiction, based on stocktake of existing assessments	**Sovereignty spectrum: access, control, choice or leverage over a capability** Sovereignty is calculated based on the proportion of boxes ticked out of the possible boxes for that row (excluding N/As) and converted into a standardised sovereignty rating							**Competitive advantage** What competitive advantage a country currently has based on the maturity of capability, sovereignty over that capability, and the scarcity of that capability globally	
See stocktake sheet for this layer for source of maturity rating	**Resilient choice —** from a mix of international and sovereign capability					**Export leverage** through export of capability	**Sovereignty rating** Measures the proportion of international access, sovereign control, resilient choice and export leverage over a capability	**Global scarcity**	**Agency score**
	International access to capability within jurisdiction		**Sovereign control** over capability within jurisdiction						
	Subject to **extrajudicial reach** (e.g. China) (half weighted)	Subject to **Rule of law** (e.g. UK) (full weight)	Controlled by **domestic business** (full weight)	Controlled by **domestic public interest organisation** (full weight)	Controlled by the **government** (full weight)	**Used** by other countries (full weight)		of capability on a global level (i.e. how many other countries have this capability?)	Measures a country's strategic position in a given AI capability by combining the maturity of its capability, its sovereignty over that capability, and the scarcity of that capability on the global stage, into a single score
Emerging (2)	N/A	N/A	N/A	✓	✓	✓	High (6)	Few countries (2)	Moderate (10)
Established (4)	N/A	N/A	N/A	✓	✓	–	Medium (4)	Few countries (2)	Moderate (10)
Advanced (6)	✓	✓	✓	N/A	N/A	–	High (6)	Many countries (1)	High (13)
Established (4)	✓	✓	✓	✓	✓	✓	High (6)	Few countries (2)	High (12)
Advanced (6)	✓	✓	✓	–	✓	✓	High (6)	Few countries (2)	Very high (14)
Established (4)	✓	✓	✓	–	✓	✓	High (6)	Very few countries (3)	High (13)
Emerging (2)	✓	✓	✓	–	✓	✓	High (6)	Very few countries (3)	High (11)
Emerging (2)	–	✓	✓	–	–	–	Medium (4)	Few countries (2)	Moderate (8)
No maturity (0)	✓	✓	–	–	–	–	Low (2)	Very few countries (3)	Low (5)
No maturity (0)	✓	✓	–	–	–	–	Low (2)	Very few countries (3)	Low (5)

Prioritise tomorrow

Decision-makers tool

Next steps

The recommended actions prioritise capabilities where agency should be increased, either to seize an international leadership opportunity, advance public interest, or close a critical domestic gap. Taken together, the recommended actions reveal how agency in certain capabilities should be leveraged to secure international access to other capabilities where there is lower agency.

Public interest	Recommended action
of *increasing* agency (a normative assessment, in this case completed by TPDi, prioritising capabilities that support 'People & Planet', as defined in TPDi's report *Tetris for Australia's Future*)	Indicates the recommended strategic approach by government and the private sector to this capability based on its current maturity, sovereignty, scarcity and public interest importance (the latter of which is inherently subjective).
High public interest (2)	Close critical gap
High public interest (2)	Prioritise building
Public interest (1)	Prioritise building
Public interest (1)	Build
Public interest (1)	Leverage & maintain
Public interest (1)	Build
Public interest (1)	Maintain & monitor
Public interest (1)	Maintain & monitor
Public interest (1)	Maintain & monitor
Public interest (1)	Maintain & monitor

1 Infrastructure & resources

The physical underpinning of AI power (compute, data centres, supply chains and natural resources)

Define

AI typology — Common language to describe and measure different types of national AI capability

This layer assesses the physical underpinnings of AI power: national compute and data infrastructure, such as data centres, training and inferencing clusters, and data storage. It evaluates the hardware supply chain for AI, from strategic and critical minerals through extraction, refinement, and into accelerator design, fabrication and packaging, plus cross-border supply arrangements and other data centre hardware inputs. It covers supporting infrastructure and resources that determine where and how compute can be built and run at scale: clean electricity generation and transmission, broadband and research networks, subsea cables, water availability and usage, suitable land, and timely planning/approvals (including appropriate engagement with First Nations owners).

Category I	Category II	Category III	Category IV	Definition	Examples Not exhaustive, illustrative only	Indicators
1.2 Hardware Supply Chain Non-exhaustive, focused on critical and limited hardware inputs for AI infrastructure.	**1.2.3 International Agreements for Accelerator Supply**			Bilateral, multilateral or commercial agreements that secure access to advanced accelerators from trusted global suppliers.	Arrangements such as the US-Saudi Arabia GPU Supply Deal, UK and Nvidia Memorandum of Understanding on AI, and advanced connectivity technologies.	• Number of agreements • Diversity of supply partners
	1.2.4 Other Critical Data Centre Hardware & Construction Inputs			Supporting hardware and systems required to build and operate AI-ready data centres, including transformers that are prone to shocks, long lead times, or dominated by a few global suppliers.	Transformers (Schneider Electric); advanced cooling systems (Vertiv, Submer); copper for data centre cabling and cooling systems.	• Lead times for key components • Import dependency ratio (%)
1.3 Supporting Infrastructure & Resources	**1.3.1 Electricity**	**1.3.1.1 Clean Electricity Generation**		Availability of reliable, low-carbon power to operate AI data centres and HPC facilities. Includes renewables (solar, wind) and other dispatchable sources – generation that can be adjusted as needed to meet 24/7 energy demands (e.g. gas and battery storage).	Energy sources such as Snowy Hydro, Energy Australia, AGL. Energy Australia (Hong Kong CLP group); Iberdrola (Spain).	• Total installed capacity (GW) • Average wholesale electricity price (AUD/MWh) • Grid reliability (% of uptime, outages/year) • Renewables share • Total transmission capacity (TW); reliability, electrical outages (% of firms; World Bank) or capacity margin (diffuse sources)
		1.3.1.2 Electricity Transmission & Distribution		The national and regional networks that deliver power to data centre and compute hubs. Reliable, high-capacity transmission is essential to support large-scale AI clusters. Advanced maturity includes transmission and distribution of clean energy.	National grid operators such as the Australian Energy Market Operator and state-based transmission projects (e.g. Energy Connect).	• Transmission capacity (MW-km) • Average outage duration (minutes per customer/year) • % of clean energy transmission
	1.3.2 Network & Connectivity	**1.3.2.1 Broadband Capacity**		National internet bandwidth and latency performance, supporting connectivity between data centres, research institutions and end users.	National broadband and fibre networks with high-speed enterprise access (e.g. NBN, AARnet (research network)).	• Average fixed broadband speed (Mbps) • Latency (ms) between major cities • Network reliability, redundancy and uptime
		1.3.2.2 Subsea Cables		International and interregional subsea fibre optic connections enabling high-speed data exchange and cloud access, important for cross-border AI collaboration and redundancy.	Subsea cables connecting national networks to global internet exchange points (e.g. INDIGO and Southern Cross NEXT).	• Number of active international cables • Aggregate cable capacity (Tbps) • Geographical diversity of landing sites
	1.3.3 Water Supply			The availability, reliability and sustainability of water resources and innovation in water usage, with First Nations water rights and cultural values recognised in regional planning and resource management.	Use of closed-loop and water efficient cooling systems in facilities (e.g. recycled water usage in Western Sydney and CDC Data Centres).	• Water usage effectiveness • Percentage of recycled or reclaimed water used
	1.3.4 Suitable Land			Availability of appropriately zoned, infrastructure-ready land for AI compute or data centre development. This needs to involve appropriate approvals from First Nations owners, consider proximity to power, connectivity and cooling resources, and note the differentiated AI training and AI inferencing latency constraints on land location.	Industrial and technology precincts planned for digital infrastructure (e.g. Melbourne Data Centre Corridor).	• Land availability near high-capacity grid nodes
	1.3.5 Permitting & Approvals Process			Efficiency and clarity of planning and environmental approvals for predictable and timely permitting of large-scale infrastructure that enables compute.	Streamlined planning frameworks for strategic digital or energy infrastructure (e.g. NSW State Significant Development).	• Average approval time (months) • Number of agencies involved per permit • Existence of dedicated infrastructure approval pathways • Appropriate consultation with and approvals from First Nations owners • Utility connection time

Assess today

Maturity rating	Sovereignty rating						Agency score	
Measures the existence and sophistication of specific capability in jurisdiction, based on stocktake of existing assessments	**Sovereignty spectrum: access, control, choice or leverage over a capability** Sovereignty is calculated based on the proportion of boxes ticked out of the possible boxes for that row (excluding N/As) and converted into a standardised sovereignty rating						**Competitive advantage** What competitive advantage a country currently has based on the maturity of capability, sovereignty over that capability, and the scarcity of that capability globally	
See stocktake sheet for this layer for source of maturity rating	**Resilient choice —** from a mix of international and sovereign capability					**Export leverage** through export of capability	**Sovereignty rating** Measures the proportion of international access, sovereign control, resilient choice and export leverage over a capability	**Global scarcity** of capability on a global level (i.e. how many other countries have this capability?)	**Agency score** Measures a country's strategic position in a given AI capability by combining the maturity of its capability, its sovereignty over that capability, and the scarcity of that capability on the global stage, into a single score
	International access to capability within jurisdiction		**Sovereign control** over capability within jurisdiction						
	Subject to **extrajudicial reach** (e.g. China) (half weighted)	Subject to **Rule of law** (e.g. UK) (full weight)	Controlled by **domestic business** (full weight)	Controlled by **domestic public interest organisation** (full weight)	Controlled by the **government** (full weight)	**Used** by other countries (full weight)			
Not enough data (0)	–	–	–	–	–	–	Not enough data (0)	Very few countries (3)	Not enough data (0)
Established (4)	✓	✓	✓	✓	–	–	Medium (4)	Many countries (1)	Moderate (9)
Established (4)	✓	✓	✓	–	✓	–	Medium (4)	Very few countries (3)	High (11)
Established (4)	✓	✓	✓	–	✓	–	Medium (4)	Many countries (1)	Moderate (9)
Established (4)	✓	✓	✓	✓	✓	–	High (6)	Many countries (1)	High (11)
Established (4)	✓	✓	✓	–	–	✓	Medium (4)	Few countries (2)	Moderate (10)
Emerging (2)	✓	✓	✓	✓	✓	–	High (6)	Many countries (1)	Moderate (9)
Established (4)	✓	✓	✓	✓	✓	–	High (6)	Many countries (1)	High (11)
Established (4)	N/A	N/A	N/A	N/A	✓	N/A	High (6)	Few countries (2)	High (12)

Prioritise tomorrow

Decision-makers tool

Next steps

The recommended actions prioritise capabilities where agency should be increased, either to seize an international leadership opportunity, advance public interest, or close a critical domestic gap. Taken together, the recommended actions reveal how agency in certain capabilities should be leveraged to secure international access to other capabilities where there is lower agency.

Public interest	Recommended action
of *increasing* agency (a normative assessment, in this case completed by TPDi, prioritising capabilities that support 'People & Planet', as defined in TPDi's report *Tetris for Australia's Future*)	Indicates the recommended strategic approach by government and the private sector to this capability based on its current maturity, sovereignty, scarcity and public-interest importance (the latter of which is inherently subjective).
Public interest (1)	Gather more evidence
Public interest (1)	Maintain & monitor
High public interest (2)	Prioritise building
High public interest (2)	Maintain & monitor
High public interest (2)	Maintain & monitor
Public interest (1)	Build
High public interest (2)	Maintain & monitor
Public interest (1)	Maintain & monitor
Public interest (1)	Build

2 Data assets & lifecycle management

Data capabilities required to support AI development and use (availability and quality of data, access arrangement and data sovereignty practices)

Define

AI typology — Common language to describe and measure different types of national AI capability

This layer assesses the breadth, quality and representativeness of a country's data assets across key domains, including language and culture, health, geospatial, environment and resources, economic activity, demographics, infrastructure, and public administration. It asks how well those assets reflect the nation's diversity and support AI capability across both model development and in-life deployment. It evaluates stewardship across the full lifecycle: creation and sourcing aligned with Indigenous Data Sovereignty and ethical principles; preparation and curation to ensure accuracy, provenance and reuse; access and use governed by clear licensing and trusted cross-border arrangements; and long-term retention, deletion and auditability that uphold privacy and public trust. It examines whether datasets are machine-ready, regularly refreshed, well-documented and discoverable, and whether they sit in secure environments that enable responsible AI training, post-training alignment and in-life deployment. It also considers whether government and publicly funded data are made available in open, reusable formats while safeguarding sensitive datasets and respecting community rights, including supporting *Evaluation*, monitoring and continuous improvement of AI systems.

Category I	Category II	Category III	Definition	Examples Not exhaustive, illustrative only	Indicators	
2.1 Commitment to Indigenous Data Sovereignty			The right of First Nations people to exercise ownership over Indigenous data. Ownership of data can be expressed through the creation, collection, access, analysis, interpretation, management, dissemination and reuse of Indigenous data.	Closing the Gap: Priority Reform Four – Shared Access to Data and Information at a Regional Level; Framework for Governance of Indigenous Data; Maiam nayri Wingara Indigenous Data Sovereignty Principles; FAIR and CARE Principles; Indigenous Cultural and Intellectual Property Principles (CSIRO).	• Number of partnerships in place between First Nations representatives and government organisations to guide the improved collections, access, management and use of data to inform shared decision-making for the benefit of First Nations people • Evidence of adherence to the FAIR and CARE Principles in all stages of data lifecycle management (see below)	
2.2 Domain Specific Datasets Assesses the availability, coverage, representativeness,domain depth, and quality of datasets across key sectors that underpin national AI capability. *This can include non-Australian data that is a valuable input for the development and deployment of AI capabilities.*	**2.2.1 Language, Arts, Culture & History**		Datasets capturing linguistic, creative, cultural, multicultural, ethnic and historical expression, including large-scale text and speech corpora, First Nations and other low resource language materials, audiovisual and heritage archives, social media, and media subtitling or transcription data.	Trove (National Library of Australia); AUSTLANG (Australian Institute of Aboriginal and Torres Strait Islander Studies) – National Indigenous language catalogue and metadata repository. National Archives of Australia; LDaCa Language Data Commons of Australia.	• Coverage, inclusion and digitisation of cultural and language corpora	• Standardised metadata schema • Federated compliance and scalability (legal and institutional interoperability) • FAIR compliance (findable, accessible, interoperable, reusable) • CARE compliance (collective benefit, authority to control, responsibility and ethics) • Provenance and lineage tracking • Consent frameworks • Onshore hosting and secure processing environments (e.g. SURE) • Clear licensing • Longevity and version control • Domain specific data standards • Machine readiness formatting
	2.2.2 Medical		Health and biomedical datasets encompassing clinical records, clinical trials data, medical imaging, pharmaceutical data, service utilisation data, and population-scale genomic or epidemiological information.	Medicare Benefits Schedule (MBS); Pharmaceutical Benefits Scheme (PBS); Australian Immunisation Register (AIR) (Services Australia); National Hospital Morbidity Database (Australian Institute of Health and Welfare); Australian Genomics Health Alliance (AGHA) datasets (National Collaborative Research Infrastructure Strategy (NCRIS).	• Population-level representativeness of health datasets (e.g. completeness across age, gender, region, Indigenous status)	
	2.2.3 Geospatial		Earth observation and location-based datasets, including satellite and aerial imagery, LiDAR, cadastral maps, topographical data, and real-time positioning feeds used in logistics, mobility and urban systems.	Digital Earth Australia (DEA) (Geoscience Australia); National Land Parcel Boundaries (PSMA Australia); 5m LiDAR-derived DEM (State agencies/GA); GDA2020 coordinate grid/FSDF (Australia New Zealand Land Information Council & GA).	• Spatial granularity and temporal refresh rate of national mapping datasets (e.g. resolution ≤1 m, update frequency ≤12 months)	
	2.2.4 Environment & Resources		Data describing natural systems and resource use, including meteorological, biodiversity, water, air quality, agricultural, mining, and utilities datasets used for energy and resource optimisation.	Atlas of Living Australia (ALA) (CSIRO/NCRIS); National Environmental Science Program (NESP) – Climate Systems Hub Data; Water Quality Major Open Data Collection (Bureau of Meteorology/Water Information Research and Development Alliance); Australian Mineral Deposits Database & Australia's Identified Mineral Resources (Geoscience Australia); Australian Renewable Energy Mapping Infrastructure Project (AREMI) – renewable energy mapping datasets; Australia Ocean Data Network (AODN).	• Temporal depth and consistency of national environmental monitoring datasets (e.g. decades of satellite or sensor records) • Alignment with international data standards Global Biodiversity Information Facility (GBIF)	

Assess today

Maturity rating	Sovereignty rating							Agency score	
Measures the existence and sophistication of specific capability in jurisdiction, based on stocktake of existing assessments	**Sovereignty spectrum: access, control, choice or leverage over a capability** Sovereignty is calculated based on the proportion of boxes ticked out of the possible boxes for that row (excluding N/As) and converted into a standardised sovereignty rating							**Competitive advantage** What competitive advantage a country currently has based on the maturity of capability, sovereignty over that capability, and the scarcity of that capability globally.	
See stocktake sheet for this layer for source of maturity rating	**Resilient choice —** from a mix of international and sovereign capability					**Export leverage** through export of capability	**Sovereignty rating** Measures the proportion of international access, sovereign control, resilient choice and export leverage over a capability	**Global scarcity**	**Agency score**
	International access to capability within jurisdiction		**Sovereign control** over capability within jurisdiction						
	Access to data and related capabilities from countries that are subject to **extrajudicial reach** (e.g. China) (half weighted)	Access to data and related capabilities from countries that are subject to **Rule of law** (e.g. UK) (full weight)	Controlled by **domestic business** (full weight)	Controlled by **domestic public interest organisation** (full weight)	Controlled by the **government** (full weight)	**Used** by other countries (full weight)		of capability on a global level (i.e. how many other countries have this capability?)	Measures a country's strategic position in a given AI capability by combining the maturity of its capability, its sovereignty over that capability, and the scarcity of that capability on the global stage, into a single score
Emerging (2)	–	✓	✓	✓	✓	–	High (6)	Very few countries (3)	High (11)
Established (4)	✓	✓	✓	✓	✓	✓	High (6)	Very few countries (3)	High (13)
Advanced (6)	–	✓	✓	✓	✓	✓	High (6)	Few countries (2)	Very high (14)
Advanced (6)	–	✓	✓	✓	✓	✓	High (6)	Few countries (2)	Very high (14)
Advanced (6)	–	–	✓	✓	✓	✓	High (6)	Very few countries (3)	Very high (15)

Prioritise tomorrow

Decision-makers tool

Next steps

The recommended actions prioritise capabilities where agency should be increased, either to seize an international leadership opportunity, advance public interest, or close a critical domestic gap. Taken together, the recommended actions reveal how agency in certain capabilities should be leveraged to secure international access to other capabilities where there is lower agency.

Public interest	Recommended action
of *increasing* agency (a normative assessment, in this case completed by TPDi, prioritising capabilities that support 'People & Planet', as defined in TPDi's report *Tetris for Australia's Future*)	Indicates the recommended strategic approach by government and the private sector to this capability based on its current maturity, sovereignty, scarcity and public-interest importance (the latter of which is inherently subjective).
High public interest (2)	Close critical gap
High public interest (2)	Prioritise building
High public interest (2)	Leverage & maintain
High public interest (2)	Leverage & maintain
High public interest (2)	Leverage & maintain

2 Data assets & lifecycle management

Data capabilities required to support AI development and use (availability and quality of data, access arrangement and data sovereignty practices)

Define

AI typology — Common language to describe and measure different types of national AI capability

This layer assesses the breadth, quality and representativeness of a country's data assets across key domains, including language and culture, health, geospatial, environment and resources, economic activity, demographics, infrastructure, and public administration. It asks how well those assets reflect the nation's diversity and support AI capability across both model development and in-life deployment. It evaluates stewardship across the full lifecycle: creation and sourcing aligned with Indigenous Data Sovereignty and ethical principles; preparation and curation to ensure accuracy, provenance and reuse; access and use governed by clear licensing and trusted cross-border arrangements; and long-term retention, deletion and auditability that uphold privacy and public trust. It examines whether datasets are machine-ready, regularly refreshed, well-documented and discoverable, and whether they sit in secure environments that enable responsible AI training, post-training alignment and in-life deployment. It also considers whether government and publicly funded data are made available in open, reusable formats while safeguarding sensitive datasets and respecting community rights, including supporting evaluation, monitoring and continuous improvement of AI systems.

Category I	Category II	Category III	Definition	Examples Not exhaustive, illustrative only	Indicators	
2.2 Domain Specific Datasets Assesses the availability, coverage, representativeness,domain depth, and quality of datasets across key sectors that underpin national AI capability. *This can include non-Australian data that is a valuable input for the development and deployment of AI capabilities.*	**2.2.5 Economic**		Transaction, market and labour-force datasets, including financial flows, securities trading, customs, payments, productivity; and workforce microdata supporting macroeconomic modelling and AI-driven forecasting.	Household, Income and Labour Dynamics in Australia (HILDA) Survey (Melbourne Institute); Australian Real-Time Macroeconomic Database (The University of Melbourne); Australian Bureau of Statistics (ABS) Business Characteristics Survey; Resources and Energy Quarterly (Department of Industry, Science and Resources).	• Timeliness and disaggregation of national economic microdata (e.g. frequency of updates, industry-level granularity)	• Standardised metadata schema • Federated compliance and scalability (legal and institutional interoperability) • FAIR compliance (findable, accessible, interoperable, reusable) • CARE compliance (collective benefit, authority to control, responsibility and ethics) • Provenance and lineage tracking • Consent frameworks • Onshore hosting and secure processing environments (e.g. SURE) • Clear licensing • Longevity and version control • Domain specific data standards • Machine readiness formatting
	2.2.6 Enterprise & Business		Proprietary datasets held by private companies for in-house AI training, modelling and deployment. Includes operational, customer and sensor data across sectors, such as mining, telecommunications and finance.	Examples include customer data at banks, sensor data from mining or utilities, and operational data from telecommunications networks.	• Although difficult to measure directly, the inclusion of this category acknowledges that a substantial portion of Australia's AI capacity resides within business-owned data ecosystems • Recognising their existence ensures a more complete picture of national data capability, even where transparency or benchmarking is not currently possible	
	2.2.7 Scientific, Synthetic & Simulated Research		Datasets generated through academic, industrial or government research via experiment, observation, simulation or instrumentation across disciplines, such as physics, chemistry, materials, biology and computing. Includes open-access repositories, laboratory automation data, and synthetic or simulated datasets created to model, test or validate AI systems.	Australian Research Data Commons (ARDC) 'Synthetic Data for Research' initiative, Western Australian Department of Health Synthetic Data Innovation Project. Australian synthetic healthcare data with Synthea.	• Proportion of national research datasets discoverable via ARDC or institutional repositories • Number of national research infrastructure facilities generating or hosting synthetic/simulated datasets • Existence of formal policies for synthetic data generation, validation and reuse across research institutions	
	2.2.8 Community & Citizen Science		Data generated by individuals, families and community groups through participation in scientific, civic, cultural or recreational activities. Includes contributions from citizen science projects, local environmental monitoring, sports and hobby groups, cultural associations, and neighbourhood initiatives.	ALA national biodiversity and citizen science platform managed by CSIRO. Zooniverse Australia, online hub for public participation in scientific research.	• Proportion of government or research programs incorporating citizen- or community-generated data into analysis or decision-making • Presence of ethical, privacy or data governance frameworks supporting community data ownership and reuse (e.g. CSIRO's Citizen Science Principles, FAIR/CARE alignment)	
	2.2.9 Demographic		Population and household datasets including Census microdata, vital statistics, migration, education and longitudinal household surveys.	ABS Census of Population and Housing; ABS Labour Force Survey; Longitudinal Surveys of Australian Youth (LSAY) (National Centre for Vocational Education Research); population registers and vital statistics (ABS/Services Australia).	• Census update frequency and microdata accessibility • Data linkage between Census, education, and tax records	
	2.2.10 Infrastructure		Operational and asset data from transport, energy, telecommunications, water and digital networks, including sensor feeds, traffic and mobility data, grid telemetry, maintenance logs; asset inventories critical for national resilience and automation.	National Road and Rail Datasets (Geoscience Australia); Bureau of Infrastructure and Transport Research Economics Aviation Statistics (Infrastructure); Energy Grid Telemetry Data/AREMI layers (Australian Renewable Energy Agency & Australian Energy Market Operator); Australian Competition & Consumer Commisison Mobile Infrastructure Data Releases.	• Real-time data availability (e.g. traffic or grid feeds) • Percentage of datasets exposed via open APIs or dashboards • Public coverage of private-sector utility and asset data (energy, telecoms)	
	2.2.11 Public Administration		Administrative and institutional datasets generated by government operations, including defence, emergency and security data, as well as decision logs, tax and benefits records, service delivery data and procurement registers.	AusTender Procurement Data (Department of Finance); Taxation Statistics (Australian Taxation Office). Administrative Appeals Tribunal Decision Register; Open Government Data Portal (data.gov.au) and curated administrative releases, access to National Health Survey data (ABS).	• Cross-government data sharing frameworks e.g. *Data Availability and Transparency Act 2022* (Cth)	

Assess today

Maturity rating	Sovereignty rating							Agency score	
Measures the existence and sophistication of specific capability in jurisdiction, based on stocktake of existing assessments	**Sovereignty spectrum: access, control, choice or leverage over a capability** Sovereignty is calculated based on the proportion of boxes ticked out of the possible boxes for that row (excluding N/As) and converted into a standardised sovereignty rating							**Competitive advantage** What competitive advantage a country currently has based on the maturity of capability, sovereignty over that capability, and the scarcity of that capability globally.	
See stocktake sheet for this layer for source of maturity rating	**Resilient choice —** from a mix of international and sovereign capability					**Export leverage** through export of capability	**Sovereignty rating** Measures the proportion of international access, sovereign control, resilient choice and export leverage over a capability	**Global scarcity**	**Agency score**
	International access to capability within jurisdiction		**Sovereign control** over capability within jurisdiction						
	Access to data and related capabilities from countries that are subject to **extrajudicial reach** (e.g. China) (half weighted)	Access to data and related capabilities from countries that are subject to **Rule of law** (e.g. UK) (full weight)	Controlled by **domestic business** (full weight)	Controlled by **domestic public interest organisation** (full weight)	Controlled by the **government** (full weight)	**Used** by other countries (full weight)		of capability on a global level (i.e. how many other countries have this capability?)	Measures a country's strategic position in a given AI capability by combining the maturity of its capability, its sovereignty over that capability, and the scarcity of that capability on the global stage, into a single score
Established (4)	–	✓	✓	✓	✓	✓	High agency (6)	Many countries (1)	High (11)
Not enough data (0)	✓	✓	✓	N/A	N/A	✓	High agency (6)	Many countries (1)	Not enough data (0)
Not enough data (0)	✓	✓	✓	✓	–	✓	High agency (6)	Few countries (2)	Not enough data (0)
Not enough data (0)	✓	✓	✓	✓	–	✓	High agency (6)	Many countries (1)	Not enough data (0)
Advanced (6)	–	✓	✓	–	✓	✓	High agency (6)	Very few countries (3)	Very high (15)
Advanced (6)	–	✓	–	✓	✓	✓	High agency (6)	Very few countries (3)	Very high (15)
Emerging (2)	N/A	N/A	N/A	N/A	✓	✓	High agency (6)	Very few countries (3)	High (11)

Prioritise tomorrow

Decision-makers tool

Next steps
The recommended actions prioritise capabilities where agency should be increased, either to seize an international leadership opportunity, advance public interest, or close a critical domestic gap. Taken together, the recommended actions reveal how agency in certain capabilities should be leveraged to secure international access to other capabilities where there is lower agency.

Public interest	Recommended action
of *increasing* agency (a normative assessment, in this case completed by TPDi, prioritising capabilities that support 'People & Planet', as defined in TPDi's report *Tetris for Australia's Future*)	Indicates the recommended strategic approach by government and the private sector to this capability based on its current maturity, sovereignty, scarcity and public-interest importance (the latter of which is inherently subjective).
High public interest (2)	Maintain & monitor
High public interest (2)	Gather more evidence
High public interest (2)	Gather more evidence
High public interest (2)	Gather more evidence
High public interest (2)	Leverage & maintain
High public interest (2)	Leverage & maintain
High public interest (2)	Close critical gap

2 Data assets & lifecycle management

Data capabilities required to support AI development and use (availability and quality of data, access arrangement and data sovereignty practices)

Define

AI typology — Common language to describe and measure different types of national AI capability

This layer assesses the breadth, quality and representativeness of a country's data assets across key domains, including language and culture, health, geospatial, environment and resources, economic activity, demographics, infrastructure, and public administration. It asks how well those assets reflect the nation's diversity and support AI capability across both model development and in-life deployment. It evaluates stewardship across the full lifecycle: creation and sourcing aligned with Indigenous Data Sovereignty and ethical principles; preparation and curation to ensure accuracy, provenance and reuse; access and use governed by clear licensing and trusted cross-border arrangements; and long-term retention, deletion and auditability that uphold privacy and public trust. It examines whether datasets are machine-ready, regularly refreshed, well-documented and discoverable, and whether they sit in secure environments that enable responsible AI training, post-training alignment and in-life deployment. It also considers whether government and publicly funded data are made available in open, reusable formats while safeguarding sensitive datasets and respecting community rights, including supporting evaluation, monitoring and continuous improvement of AI systems.

Category I	Category II	Category III	Definition	Examples Not exhaustive, illustrative only	Indicators
2.3 Data Lifecycle Management	**2.3.1 Data Creation & Sourcing**	**2.3.1.1 Standards & Provenance**	Development and enforcement by government or the private sector of interoperable data and metadata standards, quality frameworks and provenance systems that ensure datasets are accurate, traceable and validated throughout their lifecycle.	The Australian Government Data Catalogue; ABS Data Quality Framework; Australian Government Architecture (AGA); ABS Data Quality Framework (DQF); Data Catalogue Vocabulary – Application Profile for Australia (DCAT-AP-AU).	• Percentage of Commonwealth and state datasets registered in the Australian Government Data Catalogue with complete metadata fields • Adoption rate of ABS Data Quality Framework across agencies • Existence and currency of agency-specific data standards aligned with AGA
		2.3.1.2 Responsible Data Sourcing	Ensuring all data collection, generation and acquisition processes uphold privacy, autonomy, human rights, community rights, and principles of FAIR, CARE, data sovereignty, and Indigenous Cultural and Intellectual Property (ICIP).	The *Data Availability and Transparency Act 2022* (Cth); The First Nations Data Governance Framework; The National AI Centre Responsible AI Toolkit. Organisation for Economic Co-operation and Development Recommendation of the Council on Artificial Intelligence (OECD/LEGAL/0449), 2019.	• Number of accredited Data Availability and Transparency (DA&T) users and schemes audited annually • Inclusion of FAIR/CARE, privacy and rights-based principles in agency data policies • Presence of ICIP clauses or First Nations data agreements in major data programs
	2.3.2 Data Preparation & Curation	**2.3.2.1 Data Quality & Validation**	Processes, tools and standards for verifying accuracy, completeness, representativeness and integrity of data prior to reuse, sharing or publication, and data engineering maturity for data use across the model lifecycle.	The Australian Government Recordkeeping Metadata Standard (AGRS); The Digital Transformation Agency (DTA) Data Maturity Model; ABS Census and Survey Validation Frameworks.	• Percentage of datasets with documented validation process before publication • Average data quality score or maturity rating (from DTA model) • Frequency of data quality audits by ABS or agency review • Data engineering maturity
		2.3.2.2 Annotation & Curation (for reusability)	Processes, tools and standards for verifying accuracy, completeness, representativeness and integrity of data prior to reuse, sharing or publication, and data engineering maturity for data use across the model lifecycle.	Trove (National Library of Australia); Geoscience Australia metadata services; Research Data Australia (RDA).	• Volume of datasets with persistent digital object identifiers (DOIs) in RDA • Percentage of datasets with machine-readable metadata (FAIR compliance)
	2.3.3 Data Access & Use *(see also 1.1.4 Data Storage Infrastructure)*	**2.3.3.1 General Use Access**	Regulatory and territorial controls defining how and where data can be processed, stored or accessed within the jurisdiction.	Consumer Data Right (CDR); My Health Record; *Security of Critical Infrastructure Act 2018 (Cth)* (amended 2021).	• Number of accredited CDR data holders and participants • Proportion of health and critical datasets hosted in ASD-certified clouds • Existence of government agency-level onshore data hosting policies
		2.3.3.2 Availability of Government Data	Publication of jurisdiction's government or publicly funded datasets under open, machine-readable and legally reusable licences to support transparency, innovation and reuse. Enablement through the existence and use of data sharing frameworks.	data.gov.au – national open-data portal; Australian Government Data Catalogue – integrated discovery index of agency datasets; data.nsw.gov.au and DataVic – state open-data portals. ARDC RDA; Personal Level Integrated Data Asset (PLIDA) (ABS).	• Total number of datasets published under CC-BY or CC0 licences • Rate of dataset updates or deprecations over time • User downloads or API calls as a proxy for reuse activity • Existence and use of data sharing frameworks
		2.3.3.3 Restricted Access – Copyright/IP	Legal and licensing frameworks that determine if and who may mine, reproduce or use datasets, particularly for AI training, model fine-tuning and commercial reuse. As well as any licensing and compensation regimes for creators.	*Copyright Act 1968* (Cth) (no text/data mining exception); Attorney-General's Department Text and Data Mining Consultation (2023–24); Creative Commons Licensing (CC-BY, CC0) – data.gov.au; Publisher Data Licensing (e.g. News Corp datasets); Creative Commons vs Proprietary Licences in data.gov.au.	• Partipation rates in licensing and compensation frameworks • Percentage of datasets under open vs restricted licences • Volume of AI training datasets with explicit reuse permissions

Assess today

Maturity rating	Sovereignty rating							Agency score	
Measures the existence and sophistication of specific capability in jurisdiction, based on stocktake of existing assessments	**Sovereignty spectrum: access, control, choice or leverage over a capability** Sovereignty is calculated based on the proportion of boxes ticked out of the possible boxes for that row (excluding N/As) and converted into a standardised sovereignty rating							**Competitive advantage** What competitive advantage a country currently has based on the maturity of capability, sovereignty over that capability, and the scarcity of that capability globally.	
See stocktake sheet for this layer for source of maturity rating	**Resilient choice —** from a mix of international and sovereign capability					**Export leverage** through export of capability	**Sovereignty rating** Measures the proportion of international access, sovereign control, resilient choice and export leverage over a capability	**Global scarcity**	**Agency score**
	International access to capability within jurisdiction		**Sovereign control** over capability within jurisdiction						
	Access to data and related capabilities from countries that are subject to **extrajudicial reach** (e.g. China) (half weighted)	Access to data and related capabilities from countries that are subject to **Rule of law** (e.g. UK) (full weight)	Controlled by **domestic business** (full weight)	Controlled by **domestic public interest organisation** (full weight)	Controlled by the **government** (full weight)	**Used** by other countries (full weight)		of capability on a global level (i.e. how many other countries have this capability?)	Measures a country's strategic position in a given AI capability by combining the maturity of its capability, its sovereignty over that capability, and the scarcity of that capability on the global stage, into a single score
Established (4)	✓	✓	✓	✓	✓	–	High (6)	Very few countries (3)	High (13)
Emerging (2)	✓	✓	✓	✓	✓	–	High (6)	Very few countries (3)	High (11)
Emerging (2)	✓	✓	✓	✓	✓	–	High (6)	Very few countries (3)	High (11)
Emerging (2)	✓	✓	✓	✓	✓	–	High (6)	Very few countries (3)	High (11)
Emerging (2)	N/A	N/A	N/A	N/A	✓	N/A	High (6)	Very few countries (3)	High (11)
Established (4)	N/A	N/A	N/A	✓	✓	–	High (6)	Very few countries (3)	High (11)
Emerging (2)	N/A	N/A	N/A	N/A	✓	–	High (6)	Very few countries (3)	High (11)

Prioritise tomorrow

Decision-makers tool

Next steps

The recommended actions prioritise capabilities where agency should be increased, either to seize an international leadership opportunity, advance public interest, or close a critical domestic gap. Taken together, the recommended actions reveal how agency in certain capabilities should be leveraged to secure international access to other capabilities where there is lower agency.

Public interest	Recommended action
of *increasing* agency (a normative assessment, in this case completed by TPDi, prioritising capabilities that support 'People & Planet', as defined in TPDi's report *Tetris for Australia's Future*)	Indicates the recommended strategic approach by government and the private sector to this capability based on its current maturity, sovereignty, scarcity and public-interest importance (the latter of which is inherently subjective).
High public interest (2)	Prioritise building
High public interest (2)	Close critical gap
High public interest (2)	Close critical gap
High public interest (2)	Close critical gap
High public interest (2)	Close critical gap
High public interest (2)	Prioritise building
High public interest (2)	Close critical gap

2 Data assets & lifecycle management

Data capabilities required to support AI development and use (availability and quality of data, access arrangement and data sovereignty practices)

Define

AI typology — Common language to describe and measure different types of national AI capability

This layer assesses the breadth, quality and representativeness of a country's data assets across key domains, including language and culture, health, geospatial, environment and resources, economic activity, demographics, infrastructure, and public administration. It asks how well those assets reflect the nation's diversity and support AI capability across both model development and in-life deployment. It evaluates stewardship across the full lifecycle: creation and sourcing aligned with Indigenous Data Sovereignty and ethical principles; preparation and curation to ensure accuracy, provenance and reuse; access and use governed by clear licensing and trusted cross-border arrangements; and long-term retention, deletion and auditability that uphold privacy and public trust. It examines whether datasets are machine-ready, regularly refreshed, well-documented and discoverable, and whether they sit in secure environments that enable responsible AI training, post-training alignment and in-life deployment. It also considers whether government and publicly funded data are made available in open, reusable formats while safeguarding sensitive datasets and respecting community rights, including supporting evaluation, monitoring and continuous improvement of AI systems.

Category I	Category II	Category III	Definition	Examples Not exhaustive, illustrative only	Indicators
2.3 Data Lifecycle Management	**2.3.3 Data Access & Use** *(see also 1.1.4 Data Storage Infrastructure)*	**2.3.3.4 Offshore Data Access** (trusted transfers)	Frameworks ensuring that any transfer, storage or processing of local data offshore or by foreign entities occurs under reciprocal, privacy-compliant and sovereign-assured arrangements.	APEC Cross-Border Privacy Rules (CBPR) System – certification model for trusted data transfers across the Asia-Pacific; Australia–Singapore Digital Economy Agreement – provisions for secure cross-border data flows and digital-trade cooperation; Australia–UK Free Trade Agreement (A-UK FTA, 2023) – digital-trade chapter guaranteeing data-flow rights with safeguards; OECD Declaration on Government Access to Data (DFFT Principles) – international norms for 'data free flow with trust'.	• Number of cross-border data transfer agreements referencing CBPR or Digital Economy Agreement standards • Evidence of annual compliance audits of data flows against domestic frameworks
		2.3.3.5 Operational Data Access & Interfaces ('In-Life')	Data sources, interfaces and access arrangements that enable AI systems, during real-world operation, to retrieve current information from external data sources and systems to support context-aware, accurate and safe performance (complements Section 2.2, which assesses the availability and quality of domain datasets).	Machine-accessible public sector datasets and application programming interfaces (APIs) supporting AI-enabled services (data.gov.au); real-time weather and environmental data feeds supporting emergency management, logistics and climate applications (BoM); verified scientific and research knowledge sources accessible for AI-assisted research (ARDC), including through Research Activity ID (RAID).	• Number of machine-accessible government and public funded data APIs available for AI-enabled services and decision support • Reliability and uptime performance of real-time operational data feeds supporting national infrastructure and service delivery
	2.3.4 Data Stewardship & Assurance	**2.3.4.1 Data Retention & Archiving**	Preserve safely and sustainably with secure, compliant and accessible long-term storage of datasets, including model-training archives and data generated by research, governed by clear retention schedules and provenance metadata to retain only what's necessary, for as short a time as necessary – supporting the 'right to delete'.	Data Retention Review (Department of Home Affairs 2025); National Archives of Australia – General Disposal Authorities (AFDA Express 2023).	• Number of datasets with documented retention rationale and expiry date • Degree of alignment with data minimisation principles (only necessary data kept) • Presence of automated deletion scheduling in archival systems • Evidence of sovereign custody for essential long-term archives (onshore, auditable) • Regular review cycles to de-scope redundant or legacy data holdings
		2.3.4.2 Data Deletion & Oversight	Remove or decommission securely with formal oversight and validation of data destruction, anonymisation, or off-ramping from systems, including verification of deletion from backups and derived models.	*Copyright Act 1968* (Cth) (no text/data mining exception); Attorney-General's Department Text and Data Mining Consultation (2023–24); Creative Commons Licensing (CC-BY, CC0) – data.gov.au; Publisher Data Licensing (e.g. News Corp datasets); Creative Commons vs Proprietary Licences in data.gov.au.	• Number of systems with end-to-end deletion verification, including backups and replicas • Existence of independent audit trails or third-party certificates confirming destruction • Explicit off-ramp clauses in all cloud and vendor contracts covering derivative data • Demonstrated ability to trace and remove training data influence from AI models (model un-training or weight re-initialisation) • National-level oversight or accreditation mechanism for data disposal assurance (e.g. Australian Signals Directorate, National Archives of Australia, or Office of the Australian Information Commissioner endorsed certification)

Assess today

Maturity rating	Sovereignty rating							Agency score	
Measures the existence and sophistication of specific capability in jurisdiction, based on stocktake of existing assessments	**Sovereignty spectrum: access, control, choice or leverage over a capability** Sovereignty is calculated based on the proportion of boxes ticked out of the possible boxes for that row (excluding N/As) and converted into a standardised sovereignty rating							**Competitive advantage** What competitive advantage a country currently has based on the maturity of capability, sovereignty over that capability, and the scarcity of that capability globally.	
See stocktake sheet for this layer for source of maturity rating	**Resilient choice —** from a mix of international and sovereign capability					**Export leverage** through export of capability	**Sovereignty rating** Measures the proportion of international access, sovereign control, resilient choice and export leverage over a capability	**Global scarcity**	**Agency score**
	International access to capability within jurisdiction		**Sovereign control** over capability within jurisdiction						
	Access to data and related capabilities from countries that are subject to **extrajudicial reach** (e.g. China) (half weighted)	Access to data and related capabilities from countries that are subject to **Rule of law** (e.g. UK) (full weight)	Controlled by **domestic business** (full weight)	Controlled by **domestic public interest organisation** (full weight)	Controlled by the **government** (full weight)	**Used** by other countries (full weight)		of capability on a global level (i.e. how many other countries have this capability?)	Measures a country's strategic position in a given AI capability by combining the maturity of its capability, its sovereignty over that capability, and the scarcity of that capability on the global stage, into a single score
Established (4)	N/A	N/A	N/A	N/A	✓	✓	High (6)	Very few countries (3)	High (13)
Established (4)	-	✓	✓	✓	✓	✓	High (6)	Very few countries (3)	High (13)
Emerging (2)	-	✓	✓	✓	✓	-	High (6)	Very few countries (3)	High (11)
Emerging (2)	-	✓	✓	✓	✓	-	High (6)	Very few countries (3)	High (11)

Prioritise tomorrow

Decision-makers tool

Next steps

The recommended actions prioritise capabilities where agency should be increased, either to seize an international leadership opportunity, advance public interest, or close a critical domestic gap. Taken together, the recommended actions reveal how agency in certain capabilities should be leveraged to secure international access to other capabilities where there is lower agency.

Public interest	Recommended action
of *increasing* agency (a normative assessment, in this case completed by TPDi, prioritising capabilities that support 'People & Planet', as defined in TPDi's report *Tetris for Australia's Future*)	Indicates the recommended strategic approach by government and the private sector to this capability based on its current maturity, sovereignty, scarcity and public-interest importance (the latter of which is inherently subjective).
High public interest (2)	Prioritise building
High public interest (2)	Prioritise building
High public interest (2)	Close critical gap
High public interest (2)	Close critical gap

Define

AI typology — Common language to describe and measure different types of national AI capability

This layer examines the capacity to develop, adapt and apply AI models that generate insights, automate tasks and create new value. It measures a country's strength in core model types (from computer vision and forecasting to robotics and generative AI), as well as the sophistication of local adaptation, alignment and orchestration practices. It considers to what extent domestic models reflect local contexts, values and languages, and whether ethical, safety and transparency mechanisms are embedded throughout their lifecycle. The layer also assesses the maturity of AI applications built on top of these models, both general purpose and sector-specific, as indicators of how effectively foundational research is translated into public and commercial use.

Category I	Category II	Category III	Definition	Examples Not exhaustive, illustrative only	Indicators
3.1 Models A core component of an AI system that processes data to recognise patterns, make predictions, generate new content or take actions in digital or physical environments.	**3.1.1 Model Development** The process of establishing and training a new model informed by local context and cultural data. **Using the European Institute of Innovation and Technology's Taxonomy for the European AI Ecosystem.*	**3.1.1.1 Computer Vision**	Models that interpret visual inputs (images, video, sensor data) for detection, classification or understanding.	Harrison.rad.1 (Harrison.ai); YOLOv8 (Ultralytics); Vision Transformer (ViT); CLIP (OpenAI) Nearmap AI; DroneShield (DroneOpdID); iBenthos; EMUSE.	• Number of domestically developed models • Number of papers published on model development by researchers working for Australian entities
		3.1.1.2 Computer Audition	Models that process, recognise and interpret sound, speech or acoustic signals.	Wav2Vec (Meta);YAMNet (Google); ResApp Health.	
		3.1.1.3 Computer Linguistics	Models for text understanding, translation and generation, including in the national semantic context.	LLMs such as GPT-4 (OpenAI); Claude (Anthropic); LLaMA (Meta); and BERT (Google, open source).	
		3.1.1.4 Robotics & Physical AI	Models that perceive, act and learn in physical environments, including autonomous mobility, manipulation and human–robot interaction.	Tesla Optimus (Tesla); Spot (Boston Dynamics); Isaac Sim (NVIDIA).	
		3.1.1.5 Forecasting	Models that predict future outcomes or trends based on historical and real-time data, including climate, economic, health and energy forecasting.	Copernicus (EU); Prophet (Meta); DeepAR (Amazon); Flood Forecasting (Google).	
		3.1.1.6 Discovery	Models to identify new patterns, hypotheses or designs – often in science, health or materials research.	AlphaFold (DeepMind); Galactica (Meta); BenevolentAI.	
		3.1.1.7 Planning / Optimisation	Models for optimisation, scheduling and decision-support in dynamic environments.	AlphaZero (Google DeepMind); Timefold Solver (Timefold.ai).	
		3.1.1.8 Creation / Generative	Models that generate new content – text, image, audio or design artefacts including multimodal – consistent with cultural, linguistic and ethical norms.	Phoenix (Leonardo AI); Matilda (Maincode); GPT-5 (OpenAI) (note ChatGPT is an application built on the GPT-5 model); Claude 3 (Anthropic); LlaMA2 (Meta), R1 (DeepSeek); Stable Diffusion (Stability AI); Dall-E 3 (OpenAI).	
		3.1.1.9 Culturally & Nationally Inclusive Models	Models trained on nationally significant datasets, including national language(s)/dialects, flora and fauna, and on weightings that encode local cultural, social and ethical values into the system, while maintaining Indigenous data sovereignty and guarding against exploitation.	Matilda (Maincode); Early Indigenous language NLP projects (University of NSW, CSIRO); Domestic LLMs with AU English support such as Indigenous/heritage language models.	
		3.1.1.10 General Purpose & Frontier Models	Models that perform across multiple domains, tasks and modalities. This includes foundation and multimodal models, modular and routed architectures (such as a mixture-of-experts and routing systems), and models capable of interacting with (or being used by software systems for them to interact with) external tools, data sources or other agents to perform complex or multi-step tasks (linked to 2.3.3.5).	Mixtral 8x7B (Mistral AI); DeepSeek-R1 (DeepSeek); PaLM-E (Google DeepMind); Flamingo (Google DeepMind); Kosmos-2 (Microsoft); AutoGen (Microsoft Research); LangGraph (LangChain).	
	3.1.2 Model Adaptation & Alignment Refining models to reflect specific domains or behavioural values.	**3.1.2.1 Domain Adaptation**	Refining a pre-trained model using sector-specific or locally sourced datasets so it performs better in a specific domain, language or operational context.	Fine-tuning a general-purpose vision model on Australian legal, medical or environmental data to tailor outputs to local conditions.	• Number of models fine-tuned domestically to specialise in priority sectors • Performance uplift vs base model
		3.1.2.2 Cultural & Linguistic Alignment	Refining models so they accurately reflect diverse local languages and First Nations communities, while guarding against exploitation and respecting cultural norms and indigenous data rights.	Te Hiku Media Māori language models; NLLB-200 (Meta).	• Number of culturally aligned models released domestically • Inclusion of Australian English and First Nations languages data with community consent

Assess today

Maturity rating — Measures the existence and sophistication of specific capability in jurisdiction, based on stocktake of existing assessments

Sovereignty rating

Spectrum of access, control, choice or leverage over a capability
Agency is calculated based on the proportion of boxes ticked out of the possible boxes for that row (excluding N/As) and converted into a standardised agency rating

Agency score

Competitive advantage
What competitive advantage a country currently has based on the maturity of capability, sovereignty over that capability, and the scarcity of that capability globally.

See stocktake sheet for this layer for source of maturity rating

Resilient choice — from a mix of international and sovereign capability

International access to capability within jurisdiction

Sovereign control over capability within jurisdiction

Export leverage through export of capability

Sovereignty rating Measures the proportion of international access, sovereign control, resilient choice and export leverage over a capability

Global scarcity of capability on a global level (i.e. how many other countries have this capability?)

Agency score Measures a country's strategic position in a given AI capability by combining the maturity of its capability, its sovereignty over that capability, and the scarcity of that capability on the global stage, into a single score

Maturity rating	AI models or applications being developed in the jurisdiction by companies from countries subject to **extrajudicial reach** (e.g. China) (half weighted)	AI models or applications being developed in the jurisdiction by companies from countries subject to **Rule of law** (e.g. UK) (full weight)	AI models or applications developed and controlled by **domestic business** (full weight)	AI models or applications developed and controlled by **domestic public interest organisation** (full weight)	AI models or applications developed and controlled by the **government** (full weight)	**Used** by other countries (full weight)	Sovereignty rating	Global scarcity	Agency score
Advanced (6)	✓	✓	✓	✓	–	✓	High (6)	Very few countries (3)	Very high (15)
Emerging (2)	–	✓	✓	✓	–	–	Medium (4)	Very few countries (3)	Moderate (9)
Established (4)	–	✓	✓	–	–	–	Medium (4)	Very few countries (3)	High (11)
Established (4)	✓	✓	✓	✓	–	✓	High (6)	Very few countries (3)	High (13)
Established (4)	–	✓	✓	✓	✓	–	High (6)	Very few countries (3)	High (13)
Emerging (2)	–	✓	✓	✓	–	–	Medium (4)	Very few countries (3)	Moderate (9)
Emerging (2)	–	✓	✓	–	–	–	Medium (4)	Very few countries (3)	Moderate (9)
Emerging (2)	✓	✓	✓	✓	–	–	Medium (4)	Very few countries (3)	Moderate (9)
Emerging (2)	–	✓	✓	✓	–	–	High (6)	Very few countries (3)	High (13)
Emerging (2)	✓	✓	✓	✓	–	–	Medium (4)	Very few countries (3)	Moderate (9)
Established (4)	✓	✓	✓	✓	✓	✓	High (6)	Few countries (2)	High (12)
Emerging (2)	–	✓	✓	✓	✓	–	High (6)	Few countries (2)	Moderate (10)

Prioritise tomorrow

Decision-makers tool

Next steps
The recommended actions prioritise capabilities where agency should be increased, either to seize an international leadership opportunity, advance public interest, or close a critical domestic gap. Taken together, the recommended actions reveal how agency in certain capabilities should be leveraged to secure international access to other capabilities where there is lower agency.

Public interest	Recommended action
of *increasing* agency (a normative assessment, in this case completed by TPDi, prioritising capabilities that support 'People & Planet', as defined in TPDi's report *Terris for Australia's Future*)	Indicates the recommended strategic approach by government and the private sector to this capability based on its current maturity, sovereignty, scarcity and public-interest importance (the latter of which is inherently subjective).
Public interest (1)	Leverage & maintain
Public interest (1)	Maintain & monitor
Public interest (1)	Build
Public interest (1)	Build
Public interest (1)	Build
Public interest (1)	Maintain & monitor
Public interest (1)	Maintain & monitor
Public interest (1)	Maintain & monitor
High public interest (2)	Close critical gap
Public interest (1)	Maintain & monitor
Public interest (1)	Build
High public interest (2)	Close critical gap

3 Models & applications

The development and adaptation of models from computer vision to optimisation, and the applications that build on top of them

Define

AI typology — Common language to describe and measure different types of national AI capability

This layer examines the capacity to develop, adapt and apply AI models that generate insights, automate tasks and create new value. It measures a country's strength in core model types (from computer vision and forecasting to robotics and generative AI), as well as the sophistication of local adaptation, alignment and orchestration practices. It considers to what extent domestic models reflect local contexts, values and languages, and whether ethical, safety and transparency mechanisms are embedded throughout their lifecycle. The layer also assesses the maturity of AI applications built on top of these models, both general purpose and sector-specific, as indicators of how effectively foundational research is translated into public and commercial use.

Category I	Category II	Category III	Definition	Examples Not exhaustive, illustrative only	Indicators
3.1 Models A core component of an AI system that processes data to recognise patterns, make predictions, generate new content or take actions in digital or physical environments.	**3.1.3 Model Tooling**		AI-enabling system software that improves model training, deployment and lifecycle management. This includes Machine Learning Operations (MLOps) platforms, monitoring tools feature stores, hardware-optimised runtimes (to speed up inferencing) that operate at the model–infrastructure interface.	Kubeflow; Hugging Face Hub; TensorRT (NVIDIA); Evidently AI.	• Availability of domestic production-ready MLOps platforms • R&D in AI infrastructure tools
	3.1.4 Model & Agent Orchestration		The capability to connect and coordinate multiple AI models, tools or agents into cohesive systems. This includes orchestration layers, middleware and agent frameworks that ensure secure interoperability, routing and governance of AI operations.	LangChain; Semantic Kernel (Microsoft); Apache Airflow.	• Availability of domestic model orchestration products and services • R&D in AI model orchestration tools
	3.1.5 Safety & Value Alignment		Models, or model ecosystems with multiple AI models, tools or agents, that comply with local ethics principles, privacy and safety regulations and societal expectations. This may entail developing an AI fabric with embedded guardrails as code.	Using techniques such as reinforcement learning to align pre-trained models with Australia's AI Ethics Principles.	• Number of domestic models incorporating ethical or safety tuning • Existence of transparency and audit frameworks • Public red-teaming or risk reports
3.2 Applications The implementation of AI models in real-world systems, tools or services to perform defined functions.	**3.2.1 General Applications**		Widely used AI-enabled software systems with cross-sectoral relevance (productivity, communication, creativity, decision support).	Copilot (Microsoft); ChatGPT (OpenAI); Magic Studio (Canva); Rovo (Atlassian).	• Number of general purpose AI applications developed domestically • Exported general purpose AI applications
	3.2.2 Sector-specific Applications		AI applications designed for a particular industry or domain, embedding domain expertise and sectoral priorities.	Specialised AI applications such as health AI diagnostics (e.g. Eucalyptus).	• Number of sector-specific AI applications developed domestically • Exported sector-specific AI applications

Assess today

Maturity rating	Sovereignty rating							Agency score	
Measures the existence and sophistication of specific capability in jurisdiction, based on stocktake of existing assessments	**Spectrum of access, control, choice or leverage over a capability** Agency is calculated based on the proportion of boxes ticked out of the possible boxes for that row (excluding N/As) and converted into a standardised agency rating							**Competitive advantage** What competitive advantage a country currently has based on the maturity of capability, sovereignty over that capability, and the scarcity of that capability globally.	
See stocktake sheet for this layer for source of maturity rating	**Resilient choice —** from a mix of international and sovereign capability					**Export leverage** through export of capability	**Sovereignty rating** Measures the proportion of international access, sovereign control, resilient choice and export leverage over a capability	**Global scarcity**	**Agency score**
	International access to capability within jurisdiction		**Sovereign control** over capability within jurisdiction						
	AI models or applications being developed in the jurisdiction by companies from countries subject to **extrajudicial reach** (e.g. China) (half weighted)	AI models or applications being developed in the jurisdiction by companies from countries subject to **Rule of law** (e.g. UK) (full weight)	AI models or applications developed and controlled by **domestic business** (full weight)	AI models or applications developed and controlled by **domestic public interest organisation** (full weight)	AI models or applications developed and controlled by the **government** (full weight)	**Used** by other countries (full weight)		of capability on a global level (i.e. how many other countries have this capability?)	Measures a country's strategic position in a given AI capability by combining the maturity of its capability, its sovereignty over that capability, and the scarcity of that capability on the global stage, into a single score
Emerging (2)	–	✓	✓	✓	–	✓	High (6)	Few countries (2)	Moderate (10)
Emerging (2)	–	✓	✓	✓	–	✓	High (6)	Few countries (2)	Moderate (10)
Not enough data (0)	–	✓	✓	✓	✓	–	High (6)	Few countries (2)	Not enough data (0)
Advanced (6)	✓	✓	✓	✓	✓	✓	High (6)	Many countries (1)	High (13)
Established (4)	✓	✓	✓	✓	✓	✓	High (6)	Many countries (1)	High (11)

Prioritise tomorrow

Decision-makers tool

Next steps

The recommended actions prioritise capabilities where agency should be increased, either to seize an international leadership opportunity, advance public interest, or close a critical domestic gap. Taken together, the recommended actions reveal how agency in certain capabilities should be leveraged to secure international access to other capabilities where there is lower agency.

Public interest	Recommended action
of *increasing* agency (a normative assessment, in this case completed by TPDi, prioritising capabilities that support 'People & Planet', as defined in TPDi's report *Terris for Australia's Future*)	Indicates the recommended strategic approach by government and the private sector to this capability based on its current maturity, sovereignty, scarcity and public-interest importance (the latter of which is inherently subjective).
Public interest (1)	Maintain & monitor
Public interest (1)	Maintain & monitor
High public interest (2)	Gather more evidence
Public interest (1)	Prioritise building
Public interest (1)	Maintain & monitor

4 Innovation & adoption

The ecosystem of support and investment that drives AI innovation and commercialisation, as well as levels and culture of adoption across society

Define

AI typology — Common language to describe and measure different types of national AI capability

This layer captures how effectively a country turns AI research and ideas into real-world value and how widely those technologies are taken up across the economy, public sector and society. It examines the vibrancy of the national AI innovation ecosystem, including investment pipelines, startup activity, and pathways for translating research into market-ready products. It also assesses the rate and inclusiveness of adoption across businesses, government and communities, as well as the public's capacity to engage critically and responsibly with AI systems. Finally, it considers trust and culture, the degree to which people and institutions feel confident in adopting AI that aligns with ethical standards and social expectations.

Assess today

Category I	Category II	Category III	Definition	Examples Not exhaustive, illustrative only	Indicators	Maturity rating Measures the existence and sophistication of specific capability in jurisdiction, based on stocktake of existing assessments	Sovereignty rating **Spectrum of access, control, choice or leverage over a capability** Sovereignty is calculated based on the proportion of boxes ticked out of the possible boxes for that row (excluding N/As) and converted into a standardised sovereignty rating					Agency score **Competitive advantage** What competitive advantage a country currently has based on the maturity of capability, sovereignty over that capability, and the scarcity of that capability globally.	
						See stocktake sheet for this layer for source of maturity rating	**Resilient choice —** from a mix of international and sovereign capability			**Export leverage** through export of capability	**Sovereignty rating** Measures the proportion of international access, sovereign control, resilient choice and export leverage over a capability	**Global scarcity**	**Agency score**
							International access to capability within jurisdiction	**Sovereign control** over capability within jurisdiction					
							Adoption of AI systems made available by international partners **occuring within jurisdiction** (half weight)	Adoption of products/ services from **domestic business** (full weight)	Adoption of products/ services from **government** (full weight)	**Used** by other countries (full weight)		of capability on a global level (i.e. how many other countries have this capability?)	Measures a country's strategic position in a given AI capability by combining the maturity of its capability, its sovereignty over that capability, and the scarcity of that capability on the global stage, into a single score
4.1 Innovation	**4.1.1 Support & Investment Availability**		The strength of the national AI innovation ecosystem (including startups, investors, incubators and accelerators) to support and scale commercially viable products and services, including the ability to convert research and development (R&D) into market-ready offerings.	AI-focused accelerators, national venture funding schemes and early-stage research translation programs (e.g. Main Sequence Ventures, Launch Vic AI streams).	• Dollars invested in AI (by stage) • Number of AI-related deals • Share of public vs private funding • Volume of government grants • FDI into domestic AI firms	Emerging (2)	✓	✓	✓	N/A	High (6)	Few countries (2)	Moderate (10)
	4.1.2 AI Native Companies		National companies developing, building, scaling and operating AI technologies, products and services at all layers of the stack.	Australian companies building language models, computer vision systems, robotics or AI platforms (e.g. Harrison.ai, Coviu, Seeing Machines, Maincode's Matilda, Sovereign Australia AI's Australis; Rising Sun Pictures; Fivecast; ComplyIQ360).	• Number of AI companies (e.g. Dealroom, paid)	Emerging (2)	✓	✓	✓	✓	High (6)	Few countries (2)	Moderate (10)
4.2 Rate of Adoption *Adoption: the process where an organisation or individual moves beyond experimentation to intentionally and successfully integrate AI into their work to deliver measurable value (including by investing in training and establishing foundational governance and data readiness practices).*	**4.2.1 Private Sector Adoption**	**4.2.1.1 Large Enterprises**	The extent to which large enterprises adopt and integrate AI across operations, decision-making and product development.	Using AI enterprise tools and internal GPTs, automating processes, AI agents, leveraging analytical and data-driven tools and services.	• NAIC AI Adoption Tracker • Percentage of enterprises using AI technologies (Eurostat) • AI recruitment	Emerging (2)	✓	✓	N/A	✓	High (6)	Few countries (2)	Moderate (10)
		4.2.1.2 SMEs & Startups	The extent to which small and medium enterprises and early stage ventures adopt and integrate AI across operations, decision-making and product development.	Using platforms for automating recruitment and onboarding processes, leveraging AI tools for coding and product development, contract reviews or project management automation.	• NAIC AI Adoption Tracker • Percentage of enterprises using AI technologies (Eurostat) • AI recruitment	Emerging (2)	✓	✓	N/A	✓	High (6)	Few countries (2)	Moderate (10)
	4.2.2 Public Sector Adoption	**4.2.2.1 Government Adoption**	The extent to which government adopts and integrates AI across operations and service delivery.	AI strategies, governance guidelines and implementation frameworks; training and development for staff; automation in service delivery, program management and procurement; development and use of AI tools for citizen services and program delivery.	• Percentage of agencies with AI adoption plans • Innovative use of AI in government • Amount of funding for AI integration	Emerging (2)	✓	✓	✓	✓	High (6)	Very few countries (3)	High (11)
		4.2.2.2 Defence & National Security	National Intelligence Community and Department of Defence (including the Defence Force) adoption and integration of AI across decision-making, operations and deployment of capabilities, as well as investment and support for R&D.	Establishment of the Defence Artificial Intelligence Research Network (DAIRNet); use of Defence supercomputers (e.g. Taingiwiita); collaboration with partners on AI projects (e.g. AUKUS Pillar II – Advanced Capabilities); investments in R&D and innovation (e.g. Defence Trailblazer's Advanced Innovation Fund); use of AI-enabled autonomous systems.	• Procurement of tools, platforms and services, R&D funding, agreements/ cooperation with partners, statistics	Established (4)	✓	✓	✓	✓	High (6)	Few countries (2)	High (12)
	4.2.3 Public Interest Adoption	**4.2.3.1 Civil Society Adoption**	The extent to which not-for-profits and community organisations adopt AI to conduct their activities.	Adoption of AI products and services by civil society organisations, including investments, projects or services to increase access (including funding datasets, etc).	• Statistics on AI adoption in the not-for-profit sector	Emerging (2)	✓	✓	✓	✓	High (6)	Few countries (2)	Moderate (10)
		4.2.3.2 Research & Academia Adoption	The extent to which research and academic communities adopt AI to conduct their activities.	Adoption of AI products and services by research and academic organisations, including investments, projects or services to increase access (including funding, datasets, etc).	• Number of programs/initiatives and amount of funding to increase access for these groups	Established (4)	✓	✓	✓	✓	High (6)	Few countries (2)	High (12)
	4.2.4 Inclusive AI Adoption		Extent to which individuals have access to, and have the choice to adopt and integrate AI products and services into their lives.	General population update of AI. Equitable access to AI-powered tools, such as premium productivity software, personalised learning aids, healthcare diagnostics, or government services.	• Extent of general public adoption of AI • Digital divide statistics • Statistics on diversity of AI adoption and availability	Emerging (2)	✓	✓	✓	N/A	High (6)	Very few countries (3)	High (11)

Prioritise tomorrow

Decision-makers tool

Next steps

The recommended actions prioritise capabilities where agency should be increased, either to seize an international leadership opportunity, advance public interest, or close a critical domestic gap. Taken together, the recommended actions reveal how agency in certain capabilities should be leveraged to secure international access to other capabilities where there is lower agency.

Public interest of *increasing* agency (a normative assessment, in this case completed by TPDi, prioritising capabilities that support 'People & Planet', as defined in TPDi's report *Tetris for Australia's Future*)	Recommended action Indicates the recommended strategic approach by government and the private sector to this capability based on its current maturity, sovereignty, scarcity and public-interest importance (the latter of which is inherently subjective).
High public interest (2)	Close critical gap
Public interest (1)	Maintain & monitor
Public interest (1)	Maintain & monitor
Public interest (1)	Maintain & monitor
Public interest (1)	Build
High public interest (2)	Close critical gap
High public interest (2)	Prioritise building
High public interest (2)	Close critical gap

4 Innovation & adoption

The ecosystem of support and investment that drives AI innovation and commercialisation, as well as levels and culture of adoption across society

Define

AI typology — Common language to describe and measure different types of national AI capability

This layer captures how effectively a country turns AI research and ideas into real-world value and how widely those technologies are taken up across the economy, public sector and society. It examines the vibrancy of the national AI innovation ecosystem, including investment pipelines, startup activity, and pathways for translating research into market-ready products. It also assesses the rate and inclusiveness of adoption across businesses, government and communities, as well as the public's capacity to engage critically and responsibly with AI systems. Finally, it considers trust and culture, the degree to which people and institutions feel confident in adopting AI that aligns with ethical standards and social expectations.

Assess today

Category I	Category II	Category III	Definition	Examples Not exhaustive, illustrative only	Indicators	Maturity rating Measures the existence and sophistication of specific capability in jurisdiction, based on stocktake of existing assessments	Sovereignty rating **Spectrum of access, control, choice or leverage over a capability** Sovereignty is calculated based on the proportion of boxes ticked out of the possible boxes for that row (excluding N/As) and converted into a standardised sovereignty rating					Agency score **Competitive advantage** What competitive advantage a country currently has based on the maturity of capability, sovereignty over that capability, and the scarcity of that capability globally.	
						See stocktake sheet for this layer for source of maturity rating	**Resilient choice —** from a mix of international and sovereign capability			**Export leverage** through export of capability	**Sovereignty rating** Measures the proportion of international access, sovereign control, resilient choice and export leverage over a capability	**Global scarcity**	**Agency score**
							International access to capability within jurisdiction	**Sovereign control** over capability within jurisdiction					
							Adoption of AI systems made available by international partners **occuring within jurisdiction** (half weight)	Adoption of products/ services from **domestic business** (full weight)	Adoption of products/ services from **government** (full weight)	**Used** by other countries (full weight)		of capability on a global level (i.e. how many other countries have this capability?)	Measures a country's strategic position in a given AI capability by combining the maturity of its capability, its sovereignty over that capability, and the scarcity of that capability on the global stage, into a single score
4.3 Culture of Adoption *(see also Social Licence in Layer 6: Governance)* *Adoption: the process where an organisation or individual moves beyond experimentation to intentionally and successfully integrate AI into their work to deliver measurable value (including by investing in training and establishing foundational governance and data readiness practices).*	**4.3.1 Discerning Adoption**		Extent to which individuals and organisations approach and choose to adopt AI in an informed, critical and responsible way.	Attitudes toward AI (use and impact), engagement in discussions on ethics and safety, critically evaluating AI tools and adapting behaviours and practices. Programs to actively engage with staff to seek their insights into best uses of AI in the workplace.	• Evidence of people choosing to exercise a right not to adopt AI • Survey statistics on attitudes towards AI • Evidence of workforce engagement programs	Emerging (2)	✓	✓	✓	N/A	High (6)	Very few countries (3)	High (11)
	4.3.2 Trust & Confidence in AI Deployment *(see also 6.2.2 Ethics, Standards & Assurance Frameworks)*	**4.3.2.1 Trust & Confidence in Public Sector**	Public confidence that government use of AI will be fit for purpose, safe, reliable, easy to use, convenient and accessible, and public trust in the integrity, accountability and governance of government institutions deploying AI.	Singapore Smart Nation Digital Government Office surveys – trust in AI deployment KPI; Estonia e-Government satisfaction surveys.	• Public surveys on trust in government to deploy and/or regulate AI responsibly (e.g. Ipsos) • Existence of appeal / redress processes • Audits / Ombudsman reports on government AI use • Existence of AI incident reporting	Emerging (2)	✓	✓	N/A	N/A	High (6)	Very few countries (3)	High (11)
	4.3.2 Trust & Confidence in AI Deployment *(see also 6.2.2 Ethics, Standards & Assurance Frameworks)*	**4.3.2.2 Trust & Confidence in Private Sector**	Consumer confidence that private sector AI systems will be transparent, fit for purpose, safe, reliable, easy to use, convenient and accessible, and trust in companies to deploy AI responsibly, ethically and in the interests of customers and society.	Singapore AI verify; NAIC benchmarks; MIT AI Incident Tracker.	• Percentage of people expressing trust in businesses using AI responsibly (e.g. Ipsos) • Percentage of decision-makers confident that AI investment provides ROI • Number of companies participating in certification programs, standards or voluntary codes • Existence of AI incident reporting	Emerging (2)	✓	✓	N/A	N/A	High (6)	Very few countries (3)	High (11)
		4.3.2.3 Trust & Confidence in Public Interest Sector	Public confidence that academic, not-for-profit and media institutions use AI in ways that are transparent, fit for purpose, safe, reliable, easy to use, convenient and accessible, and trust in those institutions to deploy AI independently, responsibly and in the public interest.	ARC Centre of Excellence for Automated Decision-Making and Society (ADM+S); AICD AI Governance. Checklist for SME and not-for-profit directors	• Number of AI-focused academic or civil society institutions • Number of independent AI audits, investigations, reports from NGOs, academia or media • Public trust perception surveys	Emerging (2)	✓	✓	N/A	N/A	High (6)	Few countries (2)	Moderate (10)

Prioritise tomorrow

Decision-makers tool

Next steps

The recommended actions prioritise capabilities where agency should be increased, either to seize an international leadership opportunity, advance public interest, or close a critical domestic gap. Taken together, the recommended actions reveal how agency in certain capabilities should be leveraged to secure international access to other capabilities where there is lower agency.

Public interest	Recommended action
of *increasing* agency (a normative assessment, in this case completed by TPDi, prioritising capabilities that support 'People & Planet', as defined in TPDi's report *Tetris for Australia's Future*)	Indicates the recommended strategic approach by government and the private sector to this capability based on its current maturity, sovereignty, scarcity and public-interest importance (the latter of which is inherently subjective).
High public interest (2)	Close critical gap
High public interest (2)	Close critical gap
High public interest (2)	Close critical gap
High public interest (2)	Close critical gap

5 Skills

The skills required for all elements of the AI ecosystem, from building and developing, to governing and living with AI

Define

AI typology — Common language to describe and measure different types of national AI capability

This layer examines the depth and breadth of human capability needed to design, build, deploy and govern AI responsibly. It assesses the technical skills required for AI research, development and infrastructure, as well as the interdisciplinary and governance skills that enable safe and ethical use across sectors. It measures how well Australia translates research into commercial outcomes, collaborates internationally, and prepares its workforce to adapt to emerging AI-driven roles. Importantly, it also evaluates literacy at the societal level – whether people, workers and institutions have the knowledge to engage critically with AI and use it safely in everyday life.

Category I	Category II	Definition	Examples Not exhaustive, illustrative only	Indicators	
5.1 Skills for Building AI Infrastructure & Developing AI	**5.1.1 Skills for Building Physical AI Infrastructure**	Specialised technical skills to design, build and maintain the physical backbone of AI, from data centres and high-performance computing clusters to the networking and power systems that sustain them.	TAFE NSW Datacentre Academy (2023); NEXTDC, Macquarie Data Centres and Canberra Data Centres, local apprenticeship partnerships; Jobs and Skills Australia Infrastructure Workforce Data (2024).	• Number of data centre technicians trained domestically • Share of data centre build or operations contracts using domestic labour/training pipelines	• Existence and scale of domestic (accredited) training capacity • Skills & Cirricula mapped to Skills for the Information Age (SFIA) frameworks • Presence of articulated entry level pathways (vet/uni/professional) • Workforce participation and diversity (gender, region, age, etc.) • Industry collaborations and placements • Government and public sector capability • CPD or microcredential uptake across professions • Ratio of skilled migrants vs domestic graduates in AI roles
	5.1.2 Skills for Building Accelerators (AI Chips)	Specialised skills to design, fabricate, assemble and optimise the accelerator hardware that powers AI computation – across chip design, fabrication, cooling, packaging and integration into large-scale compute clusters.	Semiconductor Sector Service Bureau (S3B) 'Building a sustainable talent pool' initiative. University courses: UNSW, MQU, RMIT, Curtin, UWA, Adelaide. Relevant Australian Research Centres of Excellence include Transformative Meta-Optical Systems, CQC²T, Optical Microcombs for Breakthrough Science.	• Number of engineers trained in semiconductor, systems or accelerator hardware disciplines	
	5.1.3 AI Research Skills	Expert knowledge needed to develop new AI methods and technologies, from algorithms and architectures to safety and interpretability. These skills drive frontier research and strengthen scientific leadership in AI. Individual researcher capability. Fundamental science.	ARC and CSIRO AI Fellowship Programs (2022–2025); ADM+S and AIML Centres of Excellence, research output tracking; OECD AI Research Output Dataset (Scopus).	• Number of AI PhDs, publication impact, compute access	
	5.1.4 AI Development & Application Skills	Technical expertise to turn AI research into real-world, reliable systems. Building and developing AI systems. This includes machine learning engineering, data pipelines, testing and verification, continuous delivery, and human-centred, secure-by-design approaches. Engineering practice.	Open – Applied Machine Learning: Project-based course covering the full machine learning lifecycle from design to deployment; Machine Learning Operations (MLOps): Focuses on deploying, monitoring and maintaining AI systems. QCIF and Intersect training exchange.	• Domestic hiring ratio vs imported AI specialists • Open-source AI code contributions from Australian developers (GitHub, Hugging Face) • Proportion of advanced AI engineers and researchers employed within Australia • Investment in multidisciplinary AI education programs that blend research, engineering and operations	
	5.1.5 Research & Development Capabilities (translation)	Skills for scaling and translating AI into impact, the ability to convert AI research into industrial, social or policy value. Including managing collaborative R&D, navigating funding, compliance and ethics, and scaling technology through Technology Readiness Levels. Innovation and commercialisation.	AIML Industry Solutions Program (TRL 5–8); CSIRO Responsible AI Research Centre (RAI Research Centre) (CSIRO Responsible Innovation Future Science Platform).	• Number of industry-funded AI translation projects or CRC programs • Percentage of public R&D expenditure on AI commercialisation pathways • TRL progression rate of AI prototypes to deployment in Australia	
	5.1.6 International AI Talent Collaborations	Skills and frameworks that enable trusted global research and workforce partnerships while safeguarding Australia's intellectual property, data and strategic interests. These collaborations build capability through shared standards, research exchange and secure mobility programs.	Australia–United Kingdom Research Mobility Initiatives (CSIRO–UKRI); OECD AI Working Groups; Inbound and Outbound Fellowships.	• Percentage of AI publications with international co-authorship where Australia is lead or equal partner • Ratio of inbound to outbound AI research fellows • Number of Australian experts serving on International Standards Organisation (ISO)/OECD AI standards committees	
5.2 Skills for Deploying & Maintaining AI	**5.2.1 Business Transformation & Commercial Skills**	Commercial and operational skills that turn AI prototypes into real, compliant and scalable products or services. These skills cover product management, procurement, vendor governance and change management to support safe and effective adoption.	National Artificial Intelligence Centre (NAIC) Innovate to Grow: AI Program (2023–2025); Digital Transformation Agency, AI and Automation Procurement Capability Uplift (under the Digital Transformation Strategy 2030); NSW Artificial Intelligence Venture Fund and LaunchVic AI Accelerator (VIC).	• Number of SMEs reporting AI adoption or pilot projects (ABS Innovation Survey) • Number of firms completing national AI commercialisation programs (NAIC 'Innovate to Grow') • Percentage of government AI procurements meeting assurance and vendor-sovereignty criteria	
	5.2.2 Interdisciplinary & Domain Expertise	Skills to combine deep sector knowledge with cross-disciplinary insight, bringing together experts in fields like law, health, engineering, environment and social science to design AI systems that are ethical, effective and compliant. This ensures AI decisions are context-aware and grounded in real-world understanding.	AI4Science and AI4Health (CSIRO & partners); University of Melbourne 'AI in Law and Ethics' microcredential; NSW Department of Customer Service and CSIRO 'AI for Safer Workplaces' pilot (2024).	• Number of domain-specific AI microcredential completions (health, law, energy, finance) • Percentage of AI projects with domain co-design or ethics approval	

Assess today

Maturity rating	Sovereignty rating			Agency score	
Measures the existence and sophistication of specific capability in jurisdiction, based on stocktake of existing assessments	**Spectrum of access, control, choice or leverage over a capability** Agency is calculated based on the proportion of boxes ticked out of the possible boxes for that row (excluding N/As) and converted into a standardised agency rating			**Competitive advantage** What competitive advantage a country currently has based on the maturity of capability, sovereignty over that capability, and the scarcity of that capability globally.	
See stocktake sheet for this layer for source of maturity rating	**Resilient choice —** from a mix of international and sovereign capability **International access** to capability within jurisdiction	**Sovereign control** over capability within jurisdiction	**Export leverage** through export of capability	**Sovereignty rating** Measures the proportion of international access, sovereign control, resilient choice and export leverage over a capability	**Global scarcity** of capability on a global level (i.e. how many other countries have this capability?)	**Agency score** Measures a country's strategic position in a given AI capability by combining the maturity of its capability, its sovereignty over that capability, and the scarcity of that capability on the global stage, into a single score
	Access to highly qualified **international talent pool** (half weight)	Produced by **domestic skills pipeline** (full weight)	**Used** by other countries (e.g. education as an export) (full weight)			
Advanced (6)	✓	✓	✓	High (6)	Many countries (1)	High (13)
Emerging (2)	✓	✓	✓	High (6)	Very few countries (3)	High (11)
Established (4)	✓	✓	✓	High (6)	Few countries (2)	High (12)
Emerging (2)	✓	✓	✓	High (6)	Few countries (2)	Moderate (10)
Emerging (2)	✓	✓	✓	High (6)	Few countries (2)	Moderate (10)
Emerging (2)	✓	N/A	✓	High (6)	Few countries (2)	Moderate (10)
Established (4)	✓	✓	✓	High (6)	Many countries (1)	High (11)
Not enough data (0)	✓	✓	✓	High (6)	Few countries (2)	Not enough data (0)

Prioritise tomorrow

Decision-makers tool

Next steps

The recommended actions prioritise capabilities where agency should be increased, either to seize an international leadership opportunity, advance public interest, or close a critical domestic gap. Taken together, the recommended actions reveal how agency in certain capabilities should be leveraged to secure international access to other capabilities where there is lower agency.

Public interest	Recommended action
of *increasing* agency (a normative assessment, in this case completed by TPDi, prioritising capabilities that support 'People & Planet', as defined in TPDi's report *Terra's for Australia's Future*)	Indicates the recommended strategic approach by government and the private sector to this capability based on its current maturity, sovereignty, scarcity and public-interest importance (the latter of which is inherently subjective).
Public interest (1)	Prioritise building
Public interest (1)	Maintain & monitor
Public interest (1)	Build
High public interest (2)	Close critical gap
High public interest (2)	Close critical gap
High public interest (2)	Close critical gap
Public interest (1)	Maintain & monitor
Public interest (1)	Gather more evidence

5 Skills

The skills required for all elements of the AI ecosystem, from building and developing, to governing and living with AI

Define

AI typology — Common language to describe and measure different types of national AI capability

This layer examines the depth and breadth of human capability needed to design, build, deploy and govern AI responsibly. It assesses the technical skills required for AI research, development and infrastructure, as well as the interdisciplinary and governance skills that enable safe and ethical use across sectors. It measures how well Australia translates research into commercial outcomes, collaborates internationally, and prepares its workforce to adapt to emerging AI-driven roles. Importantly, it also evaluates literacy at the societal level – whether people, workers and institutions have the knowledge to engage critically with AI and use it safely in everyday life.

Category I	Category II	Definition	Examples Not exhaustive, illustrative only	Indicators
5.3 Skills for Governing & Securing AI	**5.3.1 Assurance & Risk Management** (safety, bias, explainability)	Skills to test, monitor and certify AI systems throughout their lifecycle, ensuring they are safe, fair, transparent, and compliant with laws and standards. This includes risk management, bias detection, safety testing and explainability audits.	National Framework for the Assurance of Artificial Intelligence in Government (2024); International Association of Privacy Professionals (IAPP) Artificial Intelligence Governance Professional (AIGP) certification (delivered in Australia through Salinger Privacy, endorsed by DISR); CSIRO Data61 National AI Centre Responsible AI Network (RAIN) evaluation and testing collaborations.	• Number of certified AI assurance or governance professionals (AIGP, ISO/IEC 42001 auditors) • Percentage of high-risk AI systems undergoing independent evaluation before deployment • Average time to resolve safety/bias issues found in audits
	5.3.2 Cybersecurity & Technical Robustness	Skills to keep AI systems secure, resilient, and compliant with national and international security standards. This includes secure-by-design development, data protection, threat modelling and adversarial testing to guard against attacks and misuse.	ASD/ACSC AI Security Guidance; TAFEcyber National Consortium Programs.	• Percentage of AI systems with threat modelling and red-team reports on file • Adoption rate of ASD/ACSC 'Engaging with AI' guidance across agencies • Incident frequency or severity involving AI components (Cyber Gov reporting)
	5.3.3 Policy, Legal & Leadership Skills	Skills in technology policy, privacy, intellectual property, safety and administrative law to ensure AI is governed responsibly and in line with global best practice. These skills enable rights-based, accountable policymaking and regulation across sectors, as well as effective leadership and coordination of AI governance efforts, and underpin the strategic capability required for system design, foresight or public-interest governance of AI.	Australian Public Service Commission, Responsible AI in Government Training (2024); University of Melbourne Microcredential, Artificial Intelligence Policies (2023); Tech Policy Design Institute AI, Emerging Tech & Policy Bootcamp (2025).	• Number of public sector staff completing 'Responsible AI in Government' training • Number of legislative or regulatory instruments referencing AI principles
5.4 Skills for Living & Working with AI *(see also adoption rate and adoption culture, Layer 4: Innovation & adoption)*	**5.4.1 General Public AI Literacy & Engagement**	Skills for for people to understand and use AI safely and confidently. This includes skills to teach AI literacy and education, awareness of bias and privacy, and the intergenerational capacity to question, engage with and refuse AI in daily life and at work (as appropriate).	'AI for Everyone' Microskills (NAIC and partners); CSIRO Our Future World forums and ADM+S public trust research on AI in society.	• Percentage of workforce completing baseline AI or digital literacy microcredentials • Inclusion of AI literacy modules in state/territory school curricula • Regional participation in AI-for-Everyone programs

Assess today

Maturity rating	Sovereignty rating				Agency score	
Measures the existence and sophistication of specific capability in jurisdiction, based on stocktake of existing assessments	**Spectrum of access, control, choice or leverage over a capability** Agency is calculated based on the proportion of boxes ticked out of the possible boxes for that row (excluding N/As) and converted into a standardised agency rating				**Competitive advantage** What competitive advantage a country currently has based on the maturity of capability, sovereignty over that capability, and the scarcity of that capability globally.	
See stocktake sheet for this layer for source of maturity rating	**Resilient choice —** from a mix of international and sovereign capability **International access** to capability within jurisdiction	**Sovereign control** over capability within jurisdiction	**Export leverage** through export of capability	**Sovereignty rating** Measures the proportion of international access, sovereign control, resilient choice and export leverage over a capability	**Global scarcity** of capability on a global level (i.e. how many other countries have this capability?)	**Agency score** Measures a country's strategic position in a given AI capability by combining the maturity of its capability, its sovereignty over that capability, and the scarcity of that capability on the global stage, into a single score
	Access to highly qualified **international talent pool** (half weight)	Produced by **domestic skills pipeline** (full weight)	**Used** by other countries (e.g. education as an export) (full weight)			
Emerging (2)	✓	✓	✓	High (6)	Very few countries (3)	High (11)
Established (4)	✓	✓	✓	High (6)	Very few countries (3)	High (13)
Established (4)	✓	✓	✓	High (6)	Few countries (2)	High (12)
Emerging (2)	N/A	✓	N/A	High (6)	Very few countries (3)	High (11)

Prioritise tomorrow

Decision-makers tool

Next steps

The recommended actions prioritise capabilities where agency should be increased, either to seize an international leadership opportunity, advance public interest, or close a critical domestic gap. Taken together, the recommended actions reveal how agency in certain capabilities should be leveraged to secure international access to other capabilities where there is lower agency.

Public interest	Recommended action
of *increasing* agency (a normative assessment, in this case completed by TPDi, prioritising capabilities that support 'People & Planet', as defined in TPDi's report *Terris for Australia's Future*)	Indicates the recommended strategic approach by government and the private sector to this capability based on its current maturity, sovereignty, scarcity and public-interest importance (the latter of which is inherently subjective).
High public interest (2)	Close critical gap
Public interest (1)	Build
Public interest (1)	Build
High public interest (2)	Close critical gap

6 Governance

Strategies, frameworks and policies across government and the entire ecosystem that support national AI capability

Define

AI typology — Common language to describe and measure different types of national AI capability

This layer assesses the institutional and regulatory foundations that enable trustworthy, transparent and accountable use of AI across society. It captures the maturity of national AI strategies and leadership, the coherence of policy coordination across government, and the existence of robust legal and regulatory frameworks. It also evaluates the capacity of both public and private institutions to govern AI responsibly, supported by standards, assurance mechanisms and ethical oversight. Finally, it considers civic participation and international engagement, whether a country's governance of AI reflects democratic legitimacy at home and influence abroad.

Assess today

Category I	Category II	Definition	Examples Not exhaustive, illustrative only	Indicators	Maturity rating Measures the existence and sophistication of specific capability in jurisdiction, based on stocktake of existing assessments	Sovereignty rating **Spectrum of access, control, choice or leverage over a capability** Sovereignty is calculated based on the proportion of boxes ticked out of the possible boxes for that row (excluding N/As) and converted into a standardised sovereignty rating				Agency score **Competitive advantage** What competitive advantage a country currently has based on the maturity of capability, sovereignty over that capability, and the scarcity of that capability globally.	
					See stocktake sheet for this layer for source of maturity rating	**Resilient choice —** from a mix of international and sovereign capability **International access** to capability within jurisdiction	**Sovereign control** over capability within jurisdiction	**Export leverage** through export of capability	**Sovereignty rating** Measures the proportion of international access, sovereign control, resilient choice and export leverage over a capability	**Global scarcity** of capability on a global level (i.e. how many other countries have this capability?)	**Agency score** Measures a country's strategic position in a given AI capability by combining the maturity of its capability, its sovereignty over that capability, and the scarcity of that capability on the global stage, into a single score
						Access to governance capability that originates from other country, or application of international governance framework that applies in jurisdiction through extraterritoriality (half weight)	Governance **originating from domestic jurisdiction** (full weight)	**Used** by other countries (full weight)			
6.1 Government Strategy	**6.1.1 National AI Strategy & Leadership**	Existence and maturity of national AI strategy (vision, funding, implementation).	Singapore National AI strategy 2.0; United Kingdom AI Action Plan; United Arab Emirates Strategy for AI; Republic of Korea National AI Strategy.	• Maturity of National AI strategy – comprehensiveness and implementation quality • Dedicated institutions or governance to drive it forward • Public dollar investment in AI capability development funding, including AI workforce transition plan	Established (4)	N/A	✓	✓	High (6)	Many countries (1)	High (11)
	6.1.2 Policy Coherence & Coordination	Whole-of-government policy coordination; effective integration of AI across government strategies (cyber, industrial, education, defence, foreign policy).	Estonian AI Task Force; UAE Council for AI and UAE CEO for AI; United Kingdom Government Office for AI and AI Council; Canadian AI Taskforce.	• Clear coordination mechanisms and ownership (e.g. existence of cross-departmental AI coordination mechanisms) • Clarity on ministerial oversight and responsibilities	Emerging (2)	N/A	✓	✓	High (6)	Very few countries (3)	High (11)
6.2 Legal, Regulatory, Standards & Assurance Frameworks & Capabilities	**6.2.1 Legal & Regulatory Frameworks**	The existence and clarity of national laws and regulations that establish the legal obligations of AI developers, deployers and users. Includes (but not limited to) provisions for privacy, cybersecurity, safety, discrimination, accountability, liability, and mitigating systemic and catastrophic risks.	Horizontal AI laws (e.g. EU AI Act); sector-specific laws; 'soft law' (codes, model standards).	• Number and type of AI laws/regulations enacted (e.g. coverage of AI across critical sectors) • Clarity of decision on legislative approach • Adaptability: presence of review/update mechanisms	Established (4)	✓	✓	✓	High (6)	Very few countries (3)	High (13)
	6.2.2 Ethics, Standards & Assurance Frameworks	The technical and procedural mechanisms through which AI systems demonstrate compliance with laws, standards and ethical principles. Includes the development and adoption of national or international AI principles, standards, certification schemes and assurance testing capabilities.	Australia's AI Ethics Principles; ISO/IEC 42001, Info tech – AI; National Institute of Standards and Technology AI Risk Management Framework; United Kingdom AI Standard Hub; EU AI Act Conformity Assessment Regime; Voluntary AI Safety Standard (NAIC); FAIR and CARE Principles (see also 2.1 Commitment to Indigenous Data Sovereignty).	• Domestic regulations or guidelines citing AI standards • Presence of national standards body • Sectoral adoption rate • Availability of accredited AI testing, audit or certification facilities	Established (4)	✓	✓	✓	High (6)	Few countries (2)	High (12)
	6.2.3 Regulatory & Oversight Capability	The institutional capacity of regulators and oversight bodies to implement, monitor and enforce AI-related laws and standards. Encompasses skills, resources, coordination mechanisms, and innovation-friendly approaches such as regulatory sandboxes.	Singapore AI verify and Personal Data Protection Commission model framework; United Kingdom Digital Regulation Cooperation Forum integration with AI Security Institute; ACCC Digital Platforms; ASIC RegTech Sandbox; OAIC; eSafety.	• Number of regulators with explicit AI mandate / strategy • Existence of a national AI Safety Institute • Cross-regulator coordination mechanism • AI incident reporting obligations • Percentage of staff with AI expertise and investment in AI capability building • Number of regulators with dedicated AI technical units/advisory panels • Availability of regulatory toolkits or guidance for AI • Number of AI-related investigations and reporting	Emerging (2)	N/A	✓	✓	High (6)	Very few countries (3)	High (11)
6.3 Institutional Capacity to Govern AI Deployment	**6.3.1 Public Sector and Public Interest Institutional Capacity**	The ability of public sector and public interest institutions to design, procure and deploy AI systems responsibly, supported by clear governance structures, dedicated leadership and ethical oversight. Includes coordination, procurement standards and workforce readiness for AI governance.	Australia's AI in Government Assurance Framework (2024); Netherlands Algorithm Register; AI Playbook for the United Kingdom Government.	• Policies on AI use in government • AI governance unit existence and resourcing • Public sector AI risk/ex-post audits • Staff AI/data literacy in oversight agencies and roles • Transparency of AI use in government – registers or published documentation	Emerging (2)	N/A	✓	N/A	High (6)	Very few countries (3)	High (11)
	6.3.2 Private Sector Institutional Capacity	The ability of the private sector and industry bodies to implement, monitor and self-govern AI systems responsibly. Includes organisational AI ethics boards, risk assessment processes, and transparency or impact reporting practices.	Singapore Model AI Governance Framework, AI Verify; ISO 42001 – AI Management; NAIC Responsible AI Benchmark.	• Percentage of organisations with internal AI governance structures • Responsible AI adoption benchmark number of firms and maturity • Percentage of organisations using recognised AI governance frameworks (e.g. International Standards Organisation (ISO) 42001, Voluntary AI safety standards) • Percentage of organisations publishing AI transparency/impact reports • Percentage of companies with formal internal AI audit mechanisms	Emerging (2)	✓	✓	N/A	High (6)	Few countries (2)	Moderate (10)

Prioritise tomorrow

Decision-makers tool

Next steps
The recommended actions prioritise capabilities where agency should be increased, either to seize an international leadership opportunity, advance public interest, or close a critical domestic gap. Taken together, the recommended actions reveal how agency in certain capabilities should be leveraged to secure international access to other capabilities where there is lower agency.

Public interest of *increasing* agency (a normative assessment, in this case completed by TPDi, prioritising capabilities that support 'People & Planet', as defined in TPDi's report *Terra for Australia's Future*)	Recommended action Indicates the recommended strategic approach by government and the private sector to this capability based on its current maturity, sovereignty, scarcity and public-interest importance (the latter of which is inherently subjective).
Public interest (1)	Maintain & monitor
High public interest (2)	Close critical gap
High public interest (2)	Prioritise building
High public interest (2)	Prioritise building
High public interest (2)	Close critical gap
High public interest (2)	Close critical gap
Public interest (1)	Maintain & monitor

6 Governance

Strategies, frameworks and policies across government and the entire ecosystem that support national AI capability

Define

AI typology — Common language to describe and measure different types of national AI capability

This layer assesses the institutional and regulatory foundations that enable trustworthy, transparent and accountable use of AI across society. It captures the maturity of national AI strategies and leadership, the coherence of policy coordination across government, and the existence of robust legal and regulatory frameworks. It also evaluates the capacity of both public and private institutions to govern AI responsibly, supported by standards, assurance mechanisms and ethical oversight. Finally, it considers civic participation and international engagement, whether a country's governance of AI reflects democratic legitimacy at home and influence abroad.

Category I	Category II	Definition	Examples Not exhaustive, illustrative only	Indicators
6.4 Civic Engagement & Democratic Legitimacy		Mechanisms ensuring that citizens, civil society and academia can meaningfully participate in shaping AI policy, governance and oversight, strengthening democratic legitimacy and accountability.	Parliamentary engagement, including public inquiries; EU AI Alliance; Canadian Advisory Council on AI; Taiwan digital democracy tools; Ombudsman.	• Membership and active participation of civil society / academia / industry in national or subnational forum(s) • Number of AI-related open policy consultations and responsiveness • Participation rates for legislative consultations / hearings
6.5 International Engagement	**6.5.1 Influence & Norm Shaping**	Capacity to influence – not merely absorb – international rules, standards and governance practices for AI. Encompasses active participation and leadership in multilateral, regional and bilateral forums; contributions to global safety, research and standards initiatives; and the ability to forge strategic partnerships for compute, data and technology access through trade, diplomatic and scientific cooperation.	AI Safety Institute network collaboration; UN Independent International Scientific Panel on AI; International Telecommunication Union (ITU); ISO.	• Number of participants in key global and regional governance fora (e.g. UN, OECD Global Partnership on AI; International Telecommunication Union; AI Safety Institutes Network) • Number of international fora leadership/rapporteur roles • Standards development participation (member type P/O): ISO/IEC JTC1/SC42
	6.5.2 Access & Partnerships	Strategic partnerships for data, research and development, and technology access and export forged through trade, diplomatic and scientific cooperation.	AUKUS Agreement; bilateral trade agreements; AI capacity-building programs.	• Number of AI-relevant agreements • Dollar value of agreements • Funding allocated to capacity-building initiatives

Assess today

Maturity rating	Sovereignty rating				Agency score	
Measures the existence and sophistication of specific capability in jurisdiction, based on stocktake of existing assessments	**Spectrum of access, control, choice or leverage over a capability** Sovereignty is calculated based on the proportion of boxes ticked out of the possible boxes for that row (excluding N/As) and converted into a standardised sovereignty rating				**Competitive advantage** What competitive advantage a country currently has based on the maturity of capability, sovereignty over that capability, and the scarcity of that capability globally.	
See stocktake sheet for this layer for source of maturity rating	**Resilient choice —** from a mix of international and sovereign capability **International access** to capability within jurisdiction	**Sovereign control** over capability within jurisdiction	**Export leverage** through export of capability	**Sovereignty rating** Measures the proportion of international access, sovereign control, resilient choice and export leverage over a capability	**Global scarcity** of capability on a global level (i.e. how many other countries have this capability?)	**Agency score** Measures a country's strategic position in a given AI capability by combining the maturity of its capability, its sovereignty over that capability, and the scarcity of that capability on the global stage, into a single score
	Access to governance capability that originates from other country, or application of international governance framework that applies in jurisdiction through extraterritoriality (half weight)	Governance **originating from domestic jurisdiction** (full weight)	**Used** by other countries (full weight)			
Emerging (2)	N/A	✓	N/A	High (6)	Very few countries (3)	High (11)
Advanced (6)	✓	✓	✓	High (6)	Few countries (2)	Very high (14)
Emerging (2)	✓	✓	✓	High (6)	Very few countries (3)	High (11)

Prioritise tomorrow

Decision-makers tool

Next steps
The recommended actions prioritise capabilities where agency should be increased, either to seize an international leadership opportunity, advance public interest, or close a critical domestic gap. Taken together, the recommended actions reveal how agency in certain capabilities should be leveraged to secure international access to other capabilities where there is lower agency.

Public interest	Recommended action
of *increasing* agency (a normative assessment, in this case completed by TPDi, prioritising capabilities that support 'People & Planet', as defined in TPDi's report *Tetris for Australia's Future*)	Indicates the recommended strategic approach by government and the private sector to this capability based on its current maturity, sovereignty, scarcity and public-interest importance (the latter of which is inherently subjective).
High public interest (2)	Close critical gap
Public interest (1)	Leverage & maintain
Public interest (1)	Maintain & monitor

2025 AUSTRALIAN STOCKTAKE

Australia's 2025 AI Agency Assessment builds on a stocktake of Australia's AI maturity. The stocktake collates existing assessments of Australia's AI maturity up and until 31 December 2025.

To inform and validate the assessment, TPDi undertook a national consultation process involving more than 250 experts from across Australia's AI ecosystem. This included 14 expert roundtables across 5 cities and 6 public stocktake surveys seeking evidence and feedback across each layer of the AI ecosystem.

The stocktake, maturity ratings and supporting evidence were further refined through multiple rounds of peer review and public consultation between September 2025 and May 2026.

Key for maturity ratings

Measuring the existence and sophistication of a specific capability in jurisdiction, based on stocktake of existing assessments

Not enough data	**(0)**
No maturity – no identifiable capability	**(0)**
Emerging – early signs of progress towards some capability	**(2)**
Established – capability exists (quality variable)	**(4)**
Advanced – high-quality capability exists and is widely available	**(6)**

Infrastructure & resources

The physical underpinning of AI power (compute, data centres, supply chains and natural resources)

AI capability typology

Common language to describe and measure different types of national AI capability

AI maturity stocktake

Category I	Category II	Category III	Category IV	Definition	Maturity rating	Existing assessments of this AI capability in Australia *(non-exhaustive)*
1.1 Compute & Data Infrastructure	**1.1.1 Data Centres**			The secure, efficient physical infrastructure, including cooling systems and redundant power, that houses and supports large-scale inferencing and training compute (defined below).	Established (4)	**Australia Data Centers. Data Center Map.** Accessed 13 October 2025. https://www.datacentermap.com/australia/
						Empowering Australia's Future – Data Centres: Essential Digital Infrastructure Underpinning Everyday Life. *Mandala Partners*. October 2024. https://mandalapartners.com/reports/empowering-australia-s-digital-future
						Australia's Data Centres. *CBRE*. 1 October 2024. https://www.cbre.com.au/insights/reports/australia-s-data-centres-2024
						Australian Data Center Market – Investment Analysis & Growth Opportunities 2025-2030. *Research and Markets*. March 2025. https://www.researchandmarkets.com/report/australia-data-centers-market
	1.1.2 Training Compute Large-scale computing power required to train AI models by processing large amounts of data over extended periods, housed within a data centre.	**1.1.2.1 Private Sector Training Compute**	**1.1.2.1.1 Cloud Training Compute Infrastructure as a Service** (public cloud)	Large-scale compute clusters made available locally as Infrastructure as a Service (IaaS). Individuals, companies or organisations can rent computing capacity remotely and on demand for AI model training, often using specialised chips (accelerators) such as Graphics Processing Units (GPUs) and Tensor Processing Units (TPUs).	Established (4)	**AI Compute Sovereignty: Infrastructure Control Across Territories, Cloud Providers, and Accelerators'**. Hawkins et al. *SSRN*. June 2025. http://dx.doi.org/10.2139/ssrn.5312977
						Australia's artificial intelligence ecosystem: growth and opportunities. *National AI Centre, Department of Industry, Science and Resources*. 25 June 2025. https://www.industry.gov.au/publications/australias-artificial-intelligence-ecosystem-growth-and-opportunities
						Made in Australia: Our AI opportunity. *Australian Academy of Technological Sciences & Engineering*. 22 August 2025. https://www.atse.org.au/what-we-do/strategic-advice/made-in-australia-our-ai-opportunity/
			1.1.2.1.2 Private Training Compute Clusters	Dedicated training infrastructure owned and operated by companies for proprietary AI development (not available on demand). Typically used for confidential or long-term projects where compute cannot be shared or outsourced. May include in-house or dedicated, long-term private co-located compute supply in third-party data centres.	Emerging (2)	No specific research sources surfaced through consultation.
		1.1.2.2 Public Sector & Public Interest Training Compute	**1.1.2.2.1 Public Sector & Public Interest AI Training Infrastructure**	High Performance Computing (HPC) systems optimised for AI training, owned and operated by government, universities or research agencies. These systems may combine traditional Central Processing Unit (CPU) based HPC with AI accelerator enhanced architecture.	Emerging (2)	**Institutional research computing capabilities in Australia: 2024**. Kitaeff et al. *arXiv preprint*. 22 September 2025. https://arxiv.org/abs/2509.17351
						National Research Infrastructure Roadmap 2026. *Department of Education*. Forthcoming. Accessed April 2026. https://www.education.gov.au/national-research-infrastructure/consultations/help-shape-future-research-infrastructure-planning
						National Computational Merit Allocation Scheme 2026. *National Computational Infrastructure*. https://my.nci.org.au/mancini/ncmas/2026/
						Top500 List. June 2025. https://top500.org/
						Made in Australia: Our AI opportunity. *Australian Academy of Technological Sciences & Engineering*. 22 August 2025. https://www.atse.org.au/what-we-do/strategic-advice/made-in-australia-our-ai-opportunity/
			1.1.2.2.2 General-purpose Public Sector & Public Interest High-Performance Compute Infrastructure	National or institutional HPC systems supporting scientific, environmental and data-intensive computation, which indirectly enable AI by hosting data pre-processing, simulation or more validation tasks. This complements AI-specific infrastructure and ensures continuity of high-performance research capacity.	Emerging (2)	**Institutional research computing capabilities in Australia: 2024**. Kitaeff et al. *arXiv preprint*. 22 September 2025. https://arxiv.org/abs/2509.17351
						Made in Australia: Our AI opportunity. *Australian Academy of Technological Sciences & Engineering*. 22 August 2025. https://www.atse.org.au/what-we-do/strategic-advice/made-in-australia-our-ai-opportunity/
			1.1.2.2.3 International Agreements for Cross-border Access to Training Compute	Bilateral or multilateral agreements enabling shared access to AI training compute infrastructure across national boundaries.	Emerging (2)	**Pawsey partners with CSC, host site for LUMI, Queen of the North**. *The Pawsey Supercomputing Research Centre*. 14 October 2021. Accessed April 2026. https://pawsey.org.au/pawsey-csc-mou/
						Square Kilometre Array Observatory Treaty (shared exascale HPC for astronomy). *SKAO*. 12 March 2019. Accessed April 2026. https://www.skao.int/en/news/259/founding-members-sign-ska-observatory-treaty
						The Worldwide LHC Computing Grid (WLCG). Distributed computing infrastructure. *CERN*. Accessed April 2026. https://home.cern/science/computing/grid

AI capability typology

Common language to describe and measure different types of national AI capability

AI maturity stocktake

Category I	Category II	Category III	Category IV	Definition	Maturity rating	Existing assessments of this AI capability in Australia *(non-exhaustive)*
1.1 Compute & Data Infrastructure	**1.1.3 Inferencing Compute** Computing power used to run pre-trained AI models in real time – processing new data to generate outputs, housed within a data centre.	**1.1.3.1 Private Sector Inferencing Compute**	**1.1.3.1.1 Cloud Training Compute Infrastructure as a Service** (public cloud)	Cloud-based compute resources used to run AI models – rather than train them – offered as an on-demand commercial service. This includes national edge zones and micro data centres positioned close to the use case to reduce latency (time delay).	Established (4)	**AI Compute Sovereignty: Infrastructure Control Across Territories, Cloud Providers, and Accelerators**. Hawkins et al. *SSRN*. June 2025.https://www.researchgate.net/publication/392999259_AI_Compute_Sovereignty_Infrastructure_Control_Across_Territories_Cloud_Providers_and_Accelerators
			1.1.3.1.2 Commercial Edge Inferencing Compute Deployments	Compute resources positioned close to data sources or end users/customers– such telecommunications nodes or Internet of Things (IoT) networks – to enable rapid, low latency AI inferencing. Typically owned or managed by private firms.	Emerging (2)	**Asia/Pacific AI Maturity Study 2024 – Australia Chapter**. *IDC*. May 2024. https://www.intel.com/content/dam/www/central-libraries/us/en/documents/2024-05/idc-infobrief-asia-pacific-ai-maturity-study-2024-australia.pdf
						State of Cloud, Edge, and Security in Australia 2023–24. *Telstra*. 2024. https://www.telstra.com.au/business-enterprise/news-research/research/state-of-cloud-edge-and-security-in-australia
						The Australian Edge: The perfect market for an Edge industry. Swinhoe. *Data Centre Dynamics*. 16 August 2022. https://www.datacenterdynamics.com/en/analysis/the-australian-edge-the-perfect-market-for-an-edge-industry/
			1.1.3.1.3 Private Inferencing Compute Deployments	Dedicated inferencing infrastructure owned and operated by companies for ongoing operational use (not available on demand). Typically used for confidential or long-term projects where compute cannot be shared or outsourced. May include in-house or dedicated, long-term private co-located compute supply in third-party data centres.	Emerging (2)	No specific research sources surfaced through consultation.
		1.1.3.2 Public Sector & Public Interest Inferencing Compute	**1.1.3.2.1 Public Sector & Public Interest Inferencing Compute Clusters**	Compute clusters equipped for large-scale public sector or public interest inferencing, typically used in research, environmental modelling or national security contexts, including HPC systems.	Emerging (2)	**Made in Australia: Our AI opportunity**. *Australian Academy of Technological Sciences & Engineering*. 22 August 2025. https://www.atse.org.au/what-we-do/strategic-advice/made-in-australia-our-ai-opportunity/
						Institutional research computing capabilities in Australia: 2024. Kitaeff et al. *arXiv preprint*. 22 September 2025. https://arxiv.org/abs/2509.17351
			1.1.3.2.2 Public Sector & Public Interest Edge Inferencing Compute Deployments	Compute resources positioned close to end users/citizens enabling real-time AI decision-making for infrastructure, emergency management, or IoT sensor networks.	Established (4)	**State of the Sector: Australian IT Modernisation and Cloud 2025**. *Public Sector Network*.17 March 2025. https://publicsectornetwork.com/insight/state-of-the-sector-australian-it-modernisation-and-cloud-2025
						Mitigation Strategies for Edge Devices: Practitioner Guidance. *Australian Signals Directorate*. 4 February 2025. https://www.cyber.gov.au/business-government/protecting-devices-systems/hardening-systems-applications/network-hardening/securing-edge-devices/mitigation-strategies-for-edge-devices-practitioner-guidance
		1.1.3.3 Consumer or Personal AI Inferencing Devices		Everyday devices (e.g. smartphones, laptops) that perform on-device inferencing, typically using small or compressed models. While not significant for model training, these systems contribute to widespread AI use and local data processing.	Advanced (6)	**On-Device Inference**. Spuler. *Aussie AI*. Updated 18 September 2025. https://www.aussieai.com/research/on-device-inference
	1.1.4 Data Storage Infrastructure			Infrastructure for storing, managing and transferring large-scale datasets required for AI model training and inferencing. Emphasises scalability, throughput, and high speed interconnects (e.g. InfiniBan) for data intensive workloads across research, government and industry.	Established (4)	**Australia Data Center Storage Market Size & Share Analysis – Growth Trends and Forecasts (2025–2030)**. *Mordor Intelligence*. 2025. https://www.mordorintelligence.com/industry-reports/australia-data-center-storage-market
						State of the Sector: Australian IT Modernisation and Cloud 2025. *Public Sector Network*.17 March 2025. https://publicsectornetwork.com/insight/state-of-the-sector-australian-it-modernisation-and-cloud-2025
1.2 Hardware Supply Chain Non-exhaustive, focused on critical and limited hardware inputs for AI infrastructure.	**1.2.1 Strategic & Critical Minerals**	**1.2.1.1 Natural Resources**		In-ground reserves of minerals – including critical minerals (lithium, rare earth elements and tantalum) and strategic minerals (copper, high-purity silica) that underpin the production of accelerators and construction of data centres.	Advanced (6)	**Critical Minerals at Geoscience Australia**. *Geoscience Australia*. Updated 26 March 2025. https://www.ga.gov.au/scientific-topics/minerals/critical-minerals
						Critical Minerals in Australia: A Review of Opportunities and Research Needs. Mudd et al. *Monash University*. https://research.monash.edu/en/publications/critical-minerals-in-australia-a-review-of-opportunities-and-rese
						A review of critical mineral resources in Australia. Britt and Czarnota. *Australian Journal of Earth Sciences*, 71:8. 1016-1049. 2024. https://doi.org/10.1080/08120099.2024.2430279
		1.2.1.2 Extraction		Mining and concentrating critical and strategic minerals into usable ores, with appropriate consultations and approvals from First Nations owners.	Established (4)	**Opportunities for Australia' in Critical Minerals Strategy 2023–2030**. *Australian Government*. 20 June 2023. https://www.industry.gov.au/publications/critical-minerals-strategy-2023-2030
						Australian Critical Minerals Prospectus. *Australian Trade and Investment Commission*. https://international.austrade.gov.au/en/do-business-with-australia/sectors/energy-and-resources/critical-minerals/prospectus
						Aussie Mine Report 2024: Gold shines amid critical mineral volatility. *PWC*. 13 November 2024. https://www.pwc.com.au/media/2024/Aussie-Mine-Report-2024.html
		1.2.1.3 Refinement & Processing		Converting raw ores into high-purity materials (metals, oxides, rare-earth compounds) that can actually be used in accelerators and data centre construction.	Emerging (2)	**From minerals to materials: an assessment of Australia's critical minerals mid-stream processing capabilities**. Temminghoff and Delaval. *CSIRO*. 26 August 2024. https://www.csiro.au/en/work-with-us/services/consultancy-strategic-advice-services/CSIRO-futures/Mineral-Resources/Minerals-to-materials
						Australian Critical Minerals R&D Hub – Projects. *ANSTO*. Accessed April 2026. https://www.ansto.gov.au/criticalmineralshub#content-projects

AI capability typology

Common language to describe and measure different types of national AI capability

Category I	Category II	Category III	Category IV	Definition
1.2 Hardware Supply Chain Non-exhaustive, focused on critical and limited hardware inputs for AI infrastructure.	**1.2.2 Producing Accelerators** (AI Chips)	**1.2.2.1 Designing Accelerators** (Fabless)		Designing accelerator architectures using Electronic Design Automation (EDA) software. 'Fabless' means a company that designs accelerators but contracts out the fabrication (rather than owning and operating the manufacturing themselves).
		1.2.2.2 Manufacturing Accelerators		The physical fabrication and assembly and testing of the chips and memory units that power AI systems. This includes processes such as wafer production, photolithography, etching, doping, and component integration within fabrication plants (fabs).
		1.2.2.3 Packaging Accelerators		The post-fabrication stage where chips are tested, packaged, and assembled into modules or systems ready for integration into AI hardware. Packaging protects chips, enables electrical connectivity, and influences performance characteristics such as latency and thermal efficiency.
	1.2.3 International Agreements for Accelerator Supply			Bilateral, multilateral or commercial agreements that secure access to accelerators from trusted global suppliers.
	1.2.4 Other Critical Data Centre Hardware & Construction Inputs			Supporting hardware and systems required to build and operate AI-ready data centres, including transformers that are prone to shocks, long lead times, or dominated by a few global suppliers.
1.3 Supporting Infrastructure & Resources	**1.3.1 Electricity**	**1.3.1.1 Clean Electricity Generation**		Availability of reliable, low-carbon power to operate AI data centres and HPC facilities. Includes renewables (solar, wind) and other dispatchable sources – generation that can be adjusted as needed to meet 24/7 energy demands (e.g. gas and battery storage).
		1.3.1.2 Electricity Transmission & Distribution		The national and regional networks that deliver power to data centre and compute hubs. Reliable, high-capacity transmission is essential to support large-scale AI clusters. Advanced maturity includes transmission and distribution of clean energy.

AI maturity stocktake

Maturity rating	Existing assessments of this AI capability in Australia *(non-exhaustive)*
Emerging (2)	**Australian Semiconductor Sector Study: Capabilities, opportunities and challenges for increasing NSW's participation in the global semiconductor value chain**. *University of Sydney Nano Institute* for the NSW Chief Scientist & Engineer. December 2020. https://www.chiefscientist.nsw.gov.au/__data/assets/pdf_file/0011/1415/Australian-Semiconductor-Sector-Study.pdf **Australia's semiconductor manufacturing moonshot**. Capri and Clark. 21 September 2022. *Australian Strategic Policy Institute*. https://www.aspi.org.au/report/australias-semiconductor-national-moonshot/
None (0)	
None (0)	
Not enough data (0)	No existing research surfaced through consultation.
Established (4)	**Asia Pacific Data Centre Construction Cost Guide 2025**. *Cushman & Wakefield*. 16 January 2025. https://www.cushmanwakefield.com/en/insights/apac-data-centre-construction-cost-guide
	2024 Infrastructure Market Capacity report. *Infrastructure Australia*. 23 December 2024. https://www.infrastructureaustralia.gov.au/2024-infrastructure-market-capacity-report
Established (4)	**Energy data explorer**. *CSIRO National Energy Analysis Centre*. https://research.csiro.au/neac/data-tools-and-energy-modelling/energy-data-explorer/
	Keeping the lights on: How Australia should navigate the era of coal closures and prepare for what comes next. Wood, Reeve and Yan. *Grattan Institute*. 28 April 2024. https://grattan.edu.au/report/keeping-the-lights-on/
	Clean Energy Australia 2025 report. *Clean Energy Council*. 28 May 2025. https://cleanenergycouncil.org.au/news-resources/clean-energy-australia-report-2025
	Australia 2023: Energy Policy Review. *International Energy Agency*. 19 April 2023. https://www.iea.org/reports/australia-2023
	2024 Integrated Service Plan Generation and Storage Outlook. *Australian Energy Market Operator*. 26 June 2024. https://www.aemo.com.au/energy-systems/major-publications/integrated-system-plan-isp/2024-integrated-system-plan-isp
Established (4)	**Electricity Transmission Lines**. *Digital Atlas of Australia*. Updated 30 January 2025. https://digital.atlas.gov.au/datasets/digitalatlas::electricity-transmission-lines/about
	Rewiring the Nation. *Department of Climate Change, Energy, the Environment and Water*. Updated 15 October 2025. https://www.dcceew.gov.au/energy/renewable/rewiring-the-nation
	2024 Integrated System Plan Consultation Summary Report. *Australian Energy Market Operator*. June 2024. https://www.aemo.com.au/-/media/files/major-publications/isp/2024/supporting-materials/2024-isp-consultation-summary-report.pdf?rev=9e9011f2b861843ccbd8673ebb6e7819b&sc_lang=en

AI capability typology

Common language to describe and measure different types of national AI capability

Category I	Category II	Category III	Category IV	Definition
1.3 Supporting Infrastructure & Resources	**1.3.2 Network & Connectivity**	**1.3.2.1 Broadband Capacity**		National internet bandwidth and latency performance, supporting connectivity between data centres, research institutions and end users.
		1.3.2.2 Subsea Cables		International and interregional subsea fibre optic connections enabling high-speed data exchange and cloud access, important for cross-border AI collaboration and redundancy.
	1.3.3 Water Supply			The availability, reliability and sustainability of water resources and innovation in water usage, with First Nations water rights and cultural values recognised in regional planning and resource management.
	1.3.4 Suitable Land			Availability of appropriately zoned, infrastructure-ready land for AI compute or data centre development. This needs to involve appropriate approvals from First Nations owners, consider proximity to power, connectivity and cooling resources, and note the differentiated AI training and AI inferencing latency constraints on land location.
	1.3.5 Permitting & Approvals Process			Efficiency and clarity of planning and environmental approvals for predictable and timely permitting of large-scale infrastructure that enables compute.

AI maturity stocktake

Maturity rating	Existing assessments of this AI capability in Australia *(non-exhaustive)*
Established (4)	**Measuring Broadband Australia program.** *Australian Competition and Consumer Commission*. September 2025. https://www.accc.gov.au/by-industry/telecommunications-and-internet/telecommunications-monitoring/measuring-broadband-australia-program/latest-performance-report
	Broadband Performance Data. *Australian Competition and Consumer Commission*. Updated April 2026. Accessed October 2025. https://www.accc.gov.au/consumers/telecommunications-and-internet/broadband-performance-data
	2024 Regional Telecommunications Review: Connecting Communities, Reaching Every Region. *Regional Telecommunications Review*. 16 December 2024. https://www.rtirc.gov.au/
	Towards Ubiquitous Connectivity in Australia. Jay Guo, Li and Oppermann. *Connectivity Innovation Network White Paper*. 17 April 2024. https://www.connectivityinnovationnetwork.com/CIN_TowardsUbiquitousConnectivity.pdf
	Australian Telecommunications Sector Resilience Profile. Curtis, Harpley, Weaver, Hawkins and Jackson. *Tech Policy Design Centre, Australian National University*. September 2024. https://techpolicy.au/telecommunications_sector
Established (4)	**Australia – Submarine Cable Map**. *TeleGeography*. Updated 10 April 2026. https://www.submarinecablemap.com/country/australia
	International submarine cables landing in Australia. *Australian Communications and Media Authority*. Updated 16 January 2026. https://www.acma.gov.au/international-submarine-cables-landing-australia
	Connecting the Indo-Pacific: The future of subsea cables and opportunities for Australia. Kang. *Australian Strategic Policy Institute*. 25 September 2024. https://www.aspi.org.au/report/connecting-indo-pacific-future-subsea-cables-and-opportunities-australia/
Emerging (2)	**National performance report 2024–2025: water and wastewater service providers**. *Bureau of Meteorology*. 2024. https://www.bom.gov.au/water/npr/index.shtml
	Water in a World of Data Centres – New WSAA Community of Practice. *Water Services Association of Australia*. 12 August 2025. https://wsaa.asn.au/Web/Web/News%20Items/WaterinaWorldofDataCentres.aspx
	Science for a Water-Secure Future. National Water Grid. 2023. https://www.dcceew.gov.au/sites/default/files/documents/science-for-water-secure-future-report-2023.pdf
Established (4)	**Tightening supply of suitable land and construction delays set to impact Australia's data centre market**. *CBRE*. 10 April 2024. https://web.archive.org/web/20251008233348/https://www.cbre.com.au/press-releases/tightening-supply-of-suitable-land-and-construct-on-delays-set-to-impact-data-centre-market
	Asia Pacific Data Centre Construction Cost Guide 2025. Cushman & Wakefield. 16 January 2025. https://www.cushmanwakefield.com/en/insights/apac-data-centre-construction-cost-guide
Established (4)	**Data Centres: APAC Regulatory Guide**. *King & Wood Mallesons*. July 2025. https://web.archive.org/web/20251220154313/https://www.kwm.com/content/dam/kwm/insights/download-publication/global/2025/Data_Centre_APAC_Regulatory_Guide_2025_Australia.pdf

2 Data assets & lifecycle management

Data capabilities required to support AI development and use (availability and quality of data, access arrangement and data sovereignty practices)

AI capability typology

Common language to describe and measure different types of national AI capability

Category I	Category II	Category III	Definition
2.1 Committment to Indigenous Data Sovereignty			The right of Indigenous people to exercise ownership over Indigenous data. Ownership of data can be expressed through the creation, collection, access, analysis, interpretation, management, dissemination and reuse of Indigenous data.
2.2 Domain Specific Datasets Assesses the availability, coverage, representativeness, domain depth, and quality of datasets across key sectors that underpin national AI capability. *This can include non-Australian data that is a valuable input for the development and deployment of AI capabilities.*	**2.2.1 Language, Arts, Culture & History**		Datasets capturing linguistic, creative, cultural, multicultural, ethnic and historical expression, including large-scale text and speech corpora, First Nations and other low resource language materials, audiovisual and heritage archives, social media, and media subtitling or transcription data.
	2.2.2 Medical		Health and biomedical datasets encompassing clinical records, clinical trials data, medical imaging, pharmaceutical data, service utilisation data, and population-scale genomic or epidemiological information.
	2.2.3 Geospatial		Earth observation and location-based datasets, including satellite and aerial imagery, LiDAR, cadastral maps, topographical data, and real-time positioning feeds used in logistics, mobility and urban systems.

AI maturity stocktake

Maturity rating	Asset/policy audit of this AI capability in Australia *(non-exhaustive)*
Emerging (2)	**Closing the Gap: Priority Reform Four - Shared Access to Data and Information at a Regional Level**. *Department of the Prime Minister and Cabinet*. Accessed April 2026. https://www.closingthegap.gov.au/national-agreement/national-agreement-closing-the-gap/6-priority-reform-areas/four
	Framework for Governance of Indigenous Data. *National Indigenous Australians Agency*. Accessed April 2026. https://www.niaa.gov.au/our-work/data-evaluation-and-research/framework-governance-indigenous-data-gid
	Maiam nayri Wingara Indigenous Data Sovereignty Principles. *Maiam nayri Wingara*. 2018. Accessed April 2026. https://www.maiamnayriwingara.org/
	FAIR Principles. *GO FAIR*. 2016. Accessed April 2026. https://www.go-fair.org/fair-principles/
	CARE Principles. *Global Indigenous Data Alliance*. Accessed April 2026. https://www.gida-global.org/care
	Indigenous Cultural and Intellectual Property Principles. *CSIRO*. Updated May 2024. Accessed April 2026. https://www.csiro.au/en/about/Policies/Science-and-Delivery-Policy/Indigenous-Cultural-and-Intellectual-Property-Principles
Established (4)	**Aboriginal English Voices**. *The University of Western Australia* (Language Lab / UWA Profiles & Research Repository). Accessed October 2025. https://www.uwa.edu.au/schools/research/the-language-lab
	ACMI Film & Moving Image Collection. *Australian Centre for the Moving Image* (ACMI). Accessed October 2025. https://www.acmi.net.au/works
	Austlang for First Nations languages (MURA catalogue & AIATSIS thesauri). *Australian Institute of Aboriginal and Torres Strait Islander Studies* (AIATSIS). Accessed October 2025. https://aiatsis.gov.au/austlang
	Language Data Commons of Australia LDaCA. Accessed October 2025. https://www.ldaca.edu.au/
Advanced (6)	**Medicare Benefits Schedule** (MBS). *Australian Government Department of Health / Services Australia*. Accessed October 2025. https://www.mbsonline.gov.au/internet/mbsonline/publishing.nsf/
	Pharmaceutical Benefits Scheme (PBS). *Australian Government Department of Health / Services Australia*. Accessed October 2025. https://www.pbs.gov.au/pbs/home
	Australian Immunisation Register (AIR). *Services Australia / Australian Government Department of Health*. Accessed October 2025. https://www.servicesaustralia.gov.au/australian-immunisation-register
	National Hospitals data collection. *Australian Institute of Health and Welfare (AIHW)*. Accessed October 2025. https://www.aihw.gov.au/about-our-data/our-data-collections/national-hospitals-data-collection
	National Disability Data Asset (NDDA). *NDDA / Australian Government*. Accessed October 2025. https://www.ndda.gov.au
	Electronic Health Records for Defence Personnel. (PMKeyS, Defence eHealth) *Australian Government / Department of Defence*. 10 March 2015. Accessed October 2025. https://www.anao.gov.au/work/performance-audit/electronic-health-records-defence-personnel
Advanced (6)	**Geospatial Services NSW**. *Spatial Services* (NSW Department of Customer Service). Accessed October 2025. https://www.spatial.nsw.gov.au
	Digital Twin Victoria (DTV). *Victorian Government / Land.Victoria*. 2025. Accessed October 2025. https://digitaltwin.vic.gov.au/public/
	Digital Earth Australia (DEA). Geoscience Australia. Accessed October 2025. https://www.ga.gov.au/scientific-topics/dea
	CSDILA digital twin platform. *University of Melbourne / Centre for Spatial Data Infrastructures and Land Administration*. May 2022. Accessed October 2025. https://eng.unimelb.edu.au/csdila/research/archive/digital-twin
	Terria Platform (TerriaJS). *CSIRO*. Developed by Geoscience Australia and the NationalMap team. Accessed October 2025. https://www.terria.io/
	Shuttle Radar Topography Mission (SRTM) 1 Second Digital Elevation Model (DEM) Version 1.0. *Geoscience Australia (ELVIS – Elevation Information System)*. Accessed October 2025. https://elevation.fsdf.org.au/
	5m LiDAR-derived Digital Elevation Model (DEM). *Geoscience Australia / Digital Elevation Data*. Updated 5 March 2025. Accessed October 2025. https://www.ga.gov.au/scientific-topics/national-location-information/digital-elevation-data
	National Land Parcel Boundaries (PSMA). *PSMA Australia / Geoscape Australia*. Accessed October 2025. https://www.geoscape.com.au/

AI capability typology

Common language to describe and measure different types of national AI capability

Category I	Category II	Category III	Definition
2.3 Domain Specific Datasets Assesses the availability, coverage, representativeness, domain depth, and quality of datasets across key sectors that underpin national AI capability. *This can include non-Australian data that is a valuable input for the development and deployment of AI capabilities.*	**2.2.4 Environment & Resources**		Data describing natural systems and resource use, including meteorological, biodiversity, water, air quality, agricultural, mining, and utilities datasets used for energy and resource optimisation.
	2.2.5 Economic		Transaction, market and labour-force datasets, including financial flows, securities trading, customs, payments, productivity; and workforce microdata supporting macroeconomic modelling and AI-driven forecasting.
	2.2.6 Enterprise & Business		Proprietary datasets held by private companies for in-house AI training, modelling and deployment. Includes operational, customer and sensor data across sectors, such as mining, telecommunications and finance.
	2.2.7 Scientific, Synthetic & Simulated Research		Datasets generated through academic, industrial or government research via experiment, observation, simulation or instrumentation across disciplines, such as physics, chemistry, materials, biology and computing. Includes open-access repositories, laboratory automation data, and synthetic or simulated datasets created to model, test or validate AI systems.
	2.2.8 Community & Citizen Science		Data generated by individuals, families and community groups through participation in scientific, civic, cultural or recreational activities. Includes contributions from citizen science projects, local environmental monitoring, sports and hobby groups, cultural assoications, and neighbourhood initiatives.
	2.2.9 Demographic		Population and household datasets including census microdata, vital statistics, migration, education and longitudinal household surveys.

AI maturity stocktake

Maturity rating	Asset/policy audit of this AI capability in Australia *(non-exhaustive)*
Advanced (6)	**Atlas of Living Australia (ALA)**. CSIRO / Australian Government. Accessed October 2025. https://www.ala.org.au
	Water Quality Major Open Data Collection. *University of South Australia / SA Water / Water Research Australia*. Accessed October 2025. https://researchdata.edu.au/water-quality-major-data-collection/562002
	National Environmental Science Programme – Climate Systems Hub (NESP). *Australian Government / Department of Climate Change, Energy, the Environment and Water (DCCEEW)*. Accessed October 2025. https://www.nespclimate.com.au
	ACCESS-ESM1.5 model output prepared for CMIP6. *CSIRO Data Access Portal / Earth System Grid Federation*. Accessed October 2025. https://data.csiro.au/collection/csiro:51901
	Australian Renewable Energy Mapping Infrastructure (AREMI). *CSIRO Data61 / Australian Renewable Energy Agency (ARENA)*. Accessed October 2025. https://www.arena.gov.au/projects/aremi-project/
	Australian Mineral Deposits Database (OZMIN / AIMR). *Geoscience Australia (Australian Mines Atlas)*. Accessed October 2025. https://data.gov.au/data/dataset/34247a24-d3cf-4a98-bb9d-81671ddb99de
	Bureau of Meteorology observations & forecasts. *Australian Government / Bureau of Meteorology*. Accessed October 2025. https://www.bom.gov.au
	Water Data Online. *Australian Government / Bureau of Meteorology*. Accessed October 2025. https://www.bom.gov.au/waterdata/
	Australian Water Observations from Space (WOfS). *Geoscience Australia*. Accessed October 2025. https://www.data.gov.au/data/dataset/719a5433-2af0-4601-8036-a03f77199442?
Established (4)	**Household, Income and Labour Dynamics in Australia (HILDA)**. *Melbourne Institute / Australian Government Department of Social Services*. Accessed October 2025. https://melbourneinstitute.unimelb.edu.au/hilda
	Australian Real-Time Macroeconomic Database. *RBA, University of Melbourne / FBE Macroeconomic Database*. Accessed October 2025. https://fbe.unimelb.edu.au/economics/macrocentre/artmdatabase
	ABS international trade data. *Australian Bureau of Statistics (ABS)*. Accessed October 2025. https://www.abs.gov.au/statistics/economy/international-trade
	Resources and energy quarterly: March 2025. *Office of the Chief Economist / DISR (Department of Industry, Science and Resources)*. 31 March 2025. https://www.industry.gov.au/publications/resources-and-energy-quarterly-march-2025
	Data After Dark: Quarterly Insights into the Night-Time Economy (NTE Smart Places Dashboard). *NSW Government – Office of the 24-Hour Economy Commissioner*. 22 December 2025. Accessed October 2025. https://www.nsw.gov.au/business-and-economy/office-of-24-hour-economy-commissioner/data-after-dark-quarterly-insights
	Exports by Commodity (Australia dataset, sourced from ABS). *CEIC Data / ISI Emerging Markets Group*. Accessed October 2025. https://www.ceicdata.com/en/country/australia
Not enough data (0)	No existing research surfaced through consultation.
Not enough data (0)	No existing research surfaced through consultation.
Not enough data (0)	No existing research surfaced through consultation.
Advanced (6)	**Australian Bureau of Statistics Census & Labour Force Data**. *Australian Bureau of Statistics*. Accessed October 2025. https://www.abs.gov.au/statistics
	Longitudinal Surveys of Australian Youth (LSAY). *National Centre for Vocational Education Research / Australian Government Department of Education*. Accessed October 2025. https://www.lsay.edu.au
	Population & vital statistics registers. *Australian Bureau of Statistics* / State and Territory Registries of Births, Deaths & Marriages. Accessed October 2025. https://www.abs.gov.au/statistics/people/population

2 Data assets & lifecycle management

Data capabilities required to support AI development and use (availability and quality of data, access arrangement and data sovereignty practices)

AI capability typology

Common language to describe and measure different types of national AI capability

Category I	Category II	Category III	Definition
2.2 Domain Specific Datasets Assesses the availability, coverage, representativeness, domain depth, and quality of datasets across key sectors that underpin national AI capability. *This can include non-Australian data that is a valuable input for the development and deployment of AI capabilities.*	**2.2.10 Infrastructure**		Operational and asset data from transport, energy, telecommunications, water and digital networks, including sensor feeds, traffic and mobility data, grid telemetry, maintenance logs; asset inventories critical for national resilience and automation.
	2.2.11 Public Administration		Administrative and institutional datasets generated by government operations, including defence, emergency and security data, as well as decision logs, tax and benefits records, service delivery data and procurement registers.
2.3 Data Lifecycle Management	**2.3.1 Data Creation & Sourcing**	**2.3.1.1 Standards & Provenance**	Development and enforcement by government or the private sector of interoperable data and metadata standards, quality frameworks and provenance systems that ensure datasets are accurate, traceable and validated throughout their lifecycle.
		2.3.1.2 Responsible Data Sourcing	Ensuring all data collection, generation and acquisition processes uphold privacy, autonomy, human rights, community rights, and principles of FAIR, CARE, data sovereignty, and Indigenous Cultural and Intellectual Property (ICIP).

AI maturity stocktake

Maturity rating	Asset/policy audit of this AI capability in Australia *(non-exhaustive)*
Advanced (6)	**National Road & Rail Datasets**. *Australian Government / Department of Infrastructure, Transport, Regional Development, Communications & the Arts (DITRDCA).* Accessed October 2025. https://catalogue.data.infrastructure.gov.au/
	BITRE Aviation Statistics. *Bureau of Infrastructure, Transport and Regional Economics / Australian Government.* Accessed October 2025. https://www.bitre.gov.au/statistics/aviation
	ACCC Mobile Infrastructure Report – data release. *Australian Competition and Consumer Commission (ACCC).* Updated 11 November 2025. Accessed October 2025. https://www.data.gov.au/data/dataset/accc-mobile-infrastructure-report-data-release
	Australia mobile network benchmarking certificate. *umlaut / Accenture.* 3 October 2023. https://www.accenture.com/content/dam/accenture/final/industry/communications-and-media/document/Accenture-Australia-Mobile-Benchmark-Certificate.pdf
	City of Melbourne Open Data Platform. *City of Melbourne.* Accessed October 2025. https://data.melbourne.vic.gov.au/pages/home/
	Radio Frequency National Site Archive (RFNSA). *Australian Mobile Telecommunications Association (AMTA) /* Mobile Carriers Forum. Accessed October 2025. https://www.rfnsa.com.au
Emerging (2)	**AusTender Contract Notice Export**. *Australian Government / Department of Finance.* Accessed October 2025. www.data.gov.au/data/dataset/austender-contract-notice-export
	AusTender ICT Procurement Statistics. *Australian Government / Department of Finance.* Accessed October 2025. https://www.data.gov.au/data/dataset/groups/austender-ict-procurement-statistics
	Taxation statistics. *Australian Taxation Office.* Accessed October 2025. https://www.ato.gov.au/about-ato/research-and-statistics/in-detail/taxation-statistics
	Administrative Appeals Tribunal decision register (AAT). *Attorney-General's Department / Administrative Review Tribunal.* Accessed October 2025. https://online.aat.gov.au/eCaseSearch
Established (4)	**United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM)**. *United Nations Statistics Division.* Accessed October 2025. https://ggim.un.org/
	International Hydrographic Organization (IHO). *Principality of Monaco.* Accessed October 2025. https://www.iho.int/en/
	Australian Research Data Commons (ARDC). *Australian Government / Department of Education.* Accessed October 2025. https://www.ardc.edu.au/
	National Geospatial Data. *Geoscience Australia.* Accessed October 2025. https://www.ga.gov.au/scientific-topics/national-location-information
	Australian Geoscience Data Cube (AGDC). *Geoscience Australia, CSIRO, and the National Computational Infrastructure (NCI).* Accessed October 2025. https://www.opendatacube.org/
	Shuttle Radar Topography Mission (SRTM) 1 Second Digital Elevation Model (DEM) Version 1.0. *Geoscience Australia (ELVIS – Elevation Information System).* Accessed October 2025. https://elevation.fsdf.org.au/
	The Bureau of Meteorology Data Catalogue metadata framework for data discovery, verification and provenance. *Bureau of Meteorology.* Accessed 2026. https://www.bom.gov.au/metadata/catalogue/about.shtml
	Australian Community Climate and Earth System Simulator (ACCESS). *CSIRO and Bureau of Meteorology.* Accessed October 2025. https://research.csiro.au/access/
Emerging (2)	**Framework for Governance of Indigenous Data**. *National Indigenous Australians Agency (NIAA).* Accessed October 2025. https://www.niaa.gov.au/resource-centre/framework-governance-indigenous-data
	Designing Speech Technologies for Australian Aboriginal English: Opportunities, Risks and Participation. *University of Wollongong, The Language Lab.* 2024. https://dl.acm.org/doi/10.1145/3715275.3732010
	National Agreement on Closing the Gap – Priority Reform 4: Shared Access to Data and Information at a Regional Level. *Joint Council on Closing the Gap / Australian Government.* Accessed October 2025. https://www.closingthegap.gov.au/national-agreement/national-agreement-closing-the-gap/6-priority-reform-areas/four
	Indigenous Data Resource Hub. *Australian Research Data Commons (ARDC).* Accessed October 2025. https://www.ardc.edu.au/resource/indigenous-data/
	Good Data. *Institute of Network Cultures.* January 2019. https://networkcultures.org/blog/publication/tod-29-good-data/
	Australian Social Data Observatory (ASDO) (proposed). *ARC Centre of Excellence for Automated Decision-Making and Society (ADM+S) / Australian Research Data Commons (ARDC).* Accessed October 2025. https://www.internetobservatory.org.au/

AI capability typology

Common language to describe and measure different types of national AI capability

Category I	Category II	Category III	Definition
2.3 Data Lifecycle Management	**2.3.2 Data Preparation & Curation**	**2.3.2.1 Data Quality & Validation**	Processes, tools and standards for verifying accuracy, completeness, representativeness and integrity of data prior to reuse, sharing or publication, and data engineering maturity for data use across the model lifecyle.
		2.3.2.2 Annotation & Curation (for reusability)	Processes, tools and standards for verifying accuracy, completeness, representativeness and integrity of data prior to reuse, sharing or publication, and data engineering maturity for data use across the model lifecyle.
	2.3.3 Data Access & Use *(see also 1.1.4 Data Storage Infrastructure)*	**2.3.3.1 General Use Access**	Regulatory and territorial controls defining how and where data can be processed, stored or accessed within the jurisdiction.
		2.3.3.2 Availability of Government Data	Publication of government or publicly funded datasets under open, machine-readable and legally reusable licences to support transparency, innovation and reuse. Enablement through the existence and use of data sharing frameworks.

AI maturity stocktake

Maturity rating	Asset/policy audit of this AI capability in Australia *(non-exhaustive)*
Emerging (2)	**NSW Water Group Open Data Framework**. *NSW Department of Planning, Housing and Infrastructure / Water Group.* Accessed October 2025. https://www.water.dcceew.nsw.gov.au/our-work/science-data-and-modelling/data/open-data-framework
	Victorian Linkage Map (VLM). *Victorian Agency for Health Information (VAHI) / Victorian Department of Health.* Accessed October 2025. https://www.vahi.vic.gov.au/ourwork/data-linkage
Emerging (2)	**Guidance on privacy and developing and training generative AI models**. *Office of the Australian Information Commissioner (OAIC).* Accessed October 2025. https://www.oaic.gov.au/privacy/privacy-guidance-for-organisations-and-government-agencies/guidance-on-privacy-and-developing-and-training-generative-ai-models
	Research Data Australia Collection Description Quality Policy. *Australian Research Data Commons (ARDC).* Accessed October 2025. https://documentation.ardc.edu.au/rda/research-data-australia-collection-description-qua
	AUSTLANG: Australian Indigenous Languages Database. *Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS).* Accessed October 2025. https://aiatsis.gov.au/austlang
Emerging (2)	**Secure unified research environment (SURE)**. *Sax Institute.* 2020. Accessed October 2025. https://www.saxinstitute.org.au/solutions/sure/
	My Health Record. *Australian Government Department of Health.* 7 August 2025. Accessed October 2025. https://www.digitalhealth.gov.au/initiatives-and-programs/my-health-record
	CSIRO data access portal (DAP). *CSIRO.* 2011 (public release). Accessed October 2025. https://data.csiro.au/
Established (4)	**Data Availability and Transparency Act 2022 (Cth)** Accessed October 2025. https://www.legislation.gov.au/C2022A00011/latest/text
	Data Maturity Assessment Tool. *Australian Government Department of Finance.* 2024. Accessed October 2025. https://www.finance.gov.au/government/public-data/public-data-policy/data-maturity-assessment-tool
	Data.gov.au. *Australian Government.* 2024. Accessed October 2025. https://www.data.gov.au/data/dataset/
	Data Quality Reporting Tool. *NSW Government.* 2025. Accessed October 2025. https://www.data.nsw.gov.au/data-tools/data-quality-reporting-tool
	SEED (Sharing and Enabling Environmental Data). *NSW Government.* 2025. Accessed October 2025. https://www.seed.nsw.gov.au
	Secure unified research environment (SURE). Sax Institute. 2020. Accessed October 2025. https://www.saxinstitute.org.au/solutions/sure/
	Open Electricity. *The Superpower Institute.* September 2024. Accessed October 2025. https://explore.openelectricity.org.au
	My Health Record statistics and insights. *Australian Government Department of Health.* Accessed October 2025. https://www.digitalhealth.gov.au/sites/default/files/documents/my-health-record-statistics-december-2024.pdf
	NSW Roads Traffic Volume Counts API. *Transport for NSW.* 2017. Accessed October 2025. https://opendata.transport.nsw.gov.au/dataset/nsw-roads-traffic-volume-counts-api
	Traffic signal volume data. *Victorian Government / Department of Transport and Planning.* December 2024. Accessed October 2025. https://discover.data.vic.gov.au/dataset/traffic-signal-volume-data
	Traffic census for the Queensland state-declared road network. *Queensland Government.* 2024. Accessed October 2025. https://www.data.qld.gov.au/dataset/traffic-census-for-the-queensland-state-declared-road-network
	National Freight Data Hub. *Australian Government / Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts.* 2021. Accessed October 2025. https://datahub.freightaustralia.gov.au
	Australian Infrastructure Audit 2019. *Infrastructure Australia.* August 2019. Accessed October 2025. https://www.infrastructureaustralia.gov.au/publications/australian-infrastructure-audit-2019
	Digital Atlas of Australia — transport layers. *Geoscience Australia.* June 2024. Accessed October 2025. https://www.digital.atlas.gov.au/pages/transport
	Attorney-General's Department (2018), Guidelines on licensing public sector information for Australian Government entities. Open licensing of public sector information https://www.ag.gov.au/rights-and-protections/publications/guidelines-licensing-public-sector-information-australian-government-entities
	Personal Level Integrated Data Asset (PLIDA). *Australian Bureau of Statistics.* Accessed October 2025. https://www.abs.gov.au/about/data-services/data-integration/integrated-data/person-level-integrated-data-asset-plida

2 Data assets & lifecycle management

Data capabilities required to support AI development and use (availability and quality of data, access arrangement and data sovereignty practices)

AI capability typology

Common language to describe and measure different types of national AI capability

Category I	Category II	Category III	Definition
2.3 Data Lifecycle Management	**2.3.3 Data Access & Use** *(see also 1.1.4 Data Storage Infrastructure)*	**2.3.3.3 Restricted Access – Copyright/IP**	Legal and licensing frameworks that determine if and who may mine, reproduce or use datasets, particularly for AI training, model fine-tuning and commercial reuse. As well as any licencing and compensation regimes for creators.
		2.3.3.4 Offshore Data Access (trusted transfers)	Frameworks ensuring that any transfer, storage or processing of local data offshore or by foreign entities occurs under reciprocal, privacy-compliant and sovereign-assured arrangements.
		2.3.3.5 Operational Data Access & Interfaces ('In-Life')	Data sources, interfaces and access arrangements that enable AI systems, during real-world operation, to retrieve current information from external data sources and systems to support context-aware, accurate and safe performance (complements Section 2.2, which assesses the availability and quality of domain datasets).
	2.3.4 Data Stewardship & Assurance	**2.3.4.1 Data Retention & Archiving**	Preserve safely and sustainably with secure, compliant and accessible long-term storage of datasets, including model-training archives and data generated by research, governed by clear retention schedules and provenance metadata to retain only what's necessary, for as short a time as necessary – supporting the right to delete.
		2.3.4.2 Data Deletion & Oversight	Remove or decommission securely with formal oversight and validation of data destruction, anonymisation, or off-ramping from systems, including verification of deletion from backups and derived models.

AI maturity stocktake

Maturity rating	Asset/policy audit of this AI capability in Australia *(non-exhaustive)*
Emerging (2)	**Copyright Act 1968 (Cth)**. Accessed April 2026. https://www.legislation.gov.au/C1968A00063/latest/text
	Harnessing data and digital technology: Interim report. *Productivity Commission*. August 2025. Case study on copyright law in the age of AI https://www.pc.gov.au/inquiries-and-research/data-digital/interim/
	News Corp supplier terms: IP licensing and contractual controls on AI use *News Corp Australia*. 2024 https://www.newscorpaustralia.com/terms-and-conditions-for-provision-of-good-and-services/
Established (4)	**APEC Cross-Border Privacy Rules (certification model for trusted data transfers)** (CBPR). *Asia-Pacific Economic Cooperation (APEC)* Accessed April 2026. https://www.apec.org/docs/default-source/Groups/ECSG/CBPR/CBPR-PoliciesRulesGuidelines.pdf
	Australia–Singapore Digital Economy Agreement (provisions for cross-border data flows). *Australian Government / Department of Foreign Affairs and Trade*. Accessed October 2025. https://www.dfat.gov.au/trade/services-and-digital-trade/australia-and-singapore-digital-economy-agreement
	Declaration on Government Access to Personal Data Held by Private Sector Entities (DFFT Principles). *Organisation for Economic Co-operation and Development (OECD)*. 14 December 2022. https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0487
	Australia – UK Free Trade Agreement (digital trade chapter guaranteeing data-flow rights) (A-UK FTA). *Australian Government Department of Foreign Affairs and Trade*. Accessed October 2025. https://www.dfat.gov.au/trade/agreements/in-force/aukfta/official-text/australia-uk-fta-chapter-14-digital-trade
	Australia – US CLOUD Act Agreement. *Australian Government Department of Home Affairs*. Accessed April 2026. https://www.homeaffairs.gov.au/about-us/our-portfolios/national-security/lawful-access-telecommunications/australia-united-states-cloud-act-agreement
Established (4)	**State of the Nation 2025: Data and AI in Australia**. *ADAPT*. 2025. Accessed February 2026. https://research.adapt.com.au/wp-content/uploads/2025/08/State-of-the-Nation-2025-Data-and-AI-in-Australia.pdf
	2025 GovTech Maturity Index. *World Bank Group*. 2025. Accessed February 2026. https://www.worldbank.org/content/programs/govtech/en/gtmi-2025-update.html
Emerging (2)	**Aged Care Data and Reporting Review Consultation Paper**. *Australian Government Department of Health and Aged Care*. 2025. Accessed October 2025. https://www.health.gov.au/sites/default/files/2025-07/aged-care-data-and-reporting-review-phase-1-consultation-paper.pdf
	General disposal authorities (AFDA Express). *National Archives of Australia*. 2023. Accessed October 2025. https://www.naa.gov.au/information-management/records-authorities/types-records-authorities/afda-express-version-2-functions
	Australian Privacy Principles, Chapter 11: APP 11 Security of personal information. *Australian Government Office of the Australian Information Commissioner*. Updated 3 October 2025. Accessed April 2026. https://www.oaic.gov.au/privacy/australian-privacy-principles/australian-privacy-principles-guidelines/chapter-11-app-11-security-of-personal-information
Emerging (2)	**Data sanitization assurance**. *Microsoft Azure*. 2023. Accessed October 2025. https://nelliehelp.zendesk.com/hc/en-gb/articles/360011575797-Data-destruction-and-sanitization
	Digital Preservation 2020 Policy. *National Archives of Australia*. 30 June 2020. Accessed October 2025. https://www.naa.gov.au/about-us/who-we-are/accountability-and-reporting/archival-policy-and-planning/digital-preservation-policy
	Information security manual (ISM). *Australian Signals Directorate*. March 2025. Accessed October 2025. https://www.cyber.gov.au/business-government/asds-cyber-security-frameworks/ism?ss=true
	Self-assessment checklist: privacy obligations under the Data Retention Scheme. *Office of the Australian Information Commissioner*. 2017. Accessed October 2025. https://www.oaic.gov.au/privacy/privacy-guidance-for-organisations-and-government-agencies/more-guidance/self-assessment-checklist-privacy-obligations-under-the-data-retention-scheme
	Australian Privacy Principles, Chapter 11: APP 11 Security of personal information. *Australian Government Office of the Australian Information Commissioner*. Updated 3 October 2025. Accessed April 2026. https://www.oaic.gov.au/privacy/australian-privacy-principles/australian-privacy-principles-guidelines/chapter-11-app-11-security-of-personal-information

3 Models & applications

The development and adaptation of models from computer vision to optimisation, and the applications that build on top of them

AI capability typology

Common language to describe and measure different types of national AI capability

Category I	Category II	Category III	Definition
3.1 Models A core component of an AI system that processes data to recognise patterns, make predictions, generate new content or take actions in digital or physical environments.	**3.1.1 Model Development** The process of establishing and training a new model informed by local context and cultural data. **Using the European Institute of Innovation and Technology's Taxonomy for the European AI Ecosystem.*	**3.1.1.1 Computer Vision**	Models that interpret visual inputs (images, video, sensor data) for detection, classification or understanding.
		3.1.1.2 Computer Audition	Models that process, recognise and interpret sound, speech or acoustic signals.
		3.1.1.3 Computer Linguistics	Models for text understanding, translation and generation, including in the national semantic context.
		3.1.1.4 Robotics & Physical AI	Models that perceive, act and learn in physical environments, including autonomous mobility, manipulation and human–robot interaction.
		3.1.1.5 Forecasting	Models that predict future outcomes or trends based on historical and real-time data, including climate, economic, health and energy forecasting.
		3.1.1.6 Discovery	Models to identify new patterns, hypotheses or designs – often in science, health or materials research.
		3.1.1.7 Planning / Optimisation	Models for optimisation, scheduling and decision-support in dynamic environments.
		3.1.1.8 Creation / Generative	Models that generate new content – text, image, audio or design artefacts including multimodal – consistent with cultural, linguistic and ethical norms.
		3.1.1.9 Culturally & Nationally Inclusive Models	Models trained on nationally significant datasets, including national language(s) /dialects, flora and fauna, and on weightings that encode local cultural, social and ethical values into the system, while maintaining Indigenous data sovereignty and guarding against exploitation.
		3.1.1.10 General Purpose & Frontier Model Architectures	Models that perform across multiple domains, tasks and modalities. This includes foundation and multimodal models, modular and routed architectures (such as a mixture-of-experts and routing systems), and models capable of interacting with external tools, data sources or other agents to perform complex or multi-step tasks (linked to 2.3.3.5).
	3.1.2 Model Adaptation & Alignment Refining models to reflect specific domains or behavioural values.	**3.1.2.1 Domain Adaptation**	Refining a pre-trained model using sector-specific or locally sourced datasets to so it performs better in a specific domain, language or operational context.
		3.1.2.2 Cultural & Linguistic Alignment	Refining models so they accurately reflect diverse local languages and First Nations communities, while guarding against exploitation and respecting cultural norms and Indigenous data rights.
	3.1.3 Model Tooling		AI-enabling system software that improves model training, deployment and lifecycle management. This includes Machine Learning Operations (MLOps) platforms, monitoring tools feature stores, hardware-optimised runtimes (to speed up inferencing) that operate at the model–infrastructure interface.

AI maturity stocktake

Maturity rating	Existing assessments of this AI capability in Australia *(non-exhaustive)*
Advanced (6)	**Australia's artificial intelligence ecosystem: growth and opportunities**. *National AI Centre*. June 2025. https://www.industry.gov.au/sites/default/files/2025-06/australias-artificial-intelligence-ecosystem-growth-and-opportunities-june-2025.pdf
	Artificial Intelligence foundation models report. *CSIRO*. 2024. https://www.csiro.au/en/research/technology-space/ai/ai-foundation-models-report
	Curated list of foundation models for vision and language tasks at https://github.com/uncbiag/Awesome-Foundation-Models
	CSIRO develops AI tool for rapid identification in forensic investigations. *CSIRO*. 12 February 2025. https://www.csiro.au/en/news/all/news/2025/february/csiro-develops-ai-tool-for-rapid-identification-in-forensic-investigations Examples: Harrison.rad.1 by Harrison.ai
Emerging (2)	**Computing and Audio Research**. *University of Sydney*. https://www.sydney.edu.au/engineering/our-research/data-science-and-computer-engineering/computer-artificial-intelligence-and-software-engineering.html
Established (4)	**QUT SAIVT: Speech, audio, image and video technologies research**. *Queensland University of Technology*. https://researchdata.edu.au/qut-saivt-speech-technologies-research/448407 Examples: Maincode's Matilda LLM & Sapia.ai's SAIGE
Established (4)	List of large language models at https://en.wikipedia.org/wiki/List_of_large_language_models
	National Robotics Strategy. *Australian Government*. 28 May 2024. https://www.industry.gov.au/publications/national-robotics-strategy
Established (4)	**AI trends for healthcare**. *CSIRO*. March 2024. https://aehrc.csiro.au/wp-content/uploads/2024/03/AI-Trends-for-Healthcare.pdf
Emerging (2)	**Simulating scientists: New tool for AI-powered scientific discovery' LLM4SD (Large Language Model for Scientific Discovery)**. *Monash University & Griffith University. Science Daily*. 26 February 2025. https://sciencedaily.com/releases/2025/02/250226142444.htm
Emerging (2)	**Exemplars of Artificial Intelligence and Machine Learning in Healthcare**. *CSIRO*. 2020. https://aehrc.csiro.au/wp-content/uploads/2021/10/Exemplars-AI-in-Health-July-2020.pdf
Emerging (2)	**Australia's artificial intelligence ecosystem: catalysing an AI industry**. *National AI Centre*. 12 December 2023 https://www.industry.gov.au/publications/australias-artificial-intelligence-ecosystem-catalysing-ai-industry-december-2023 Examples: Pheonix by Leonardo.AI; SAIGE by Sapia.ai
Emerging (2)	**Indigenous peoples and artificial intelligence: A systematic review and future directions**. Perera et al. 18 June 2025, *Sage Journals*. https://journals.sagepub.com/doi/10.1177/20539517251349170?int.sj-full-text.similar-articles.6
Emerging (2)	**Artificial intelligence foundation models report**. *CSIRO*. 2024. Accessed February 2026. https://www.csiro.au/en/research/technology-space/ai/ai-foundation-models-report
Established (4)	**Artificial intelligence is revolutionising medical image analysis' Visual Language Models for Radiology**. *CSIRO and AEHRC*. 6 August 2025. https://www.csiro.au/en/news/All/Articles/2025/August/Visual-Language-Models Example: Heidi AI for healthcare
Emerging (2)	**Building Speech Recognition Systems for Language Documentation: The CoEDL Endangered Language Pipeline and Inference System (ELPIS)**. Foley et al. 2018. *The 6th Intl. Workshop on Spoken Language Technologies for Under-Resourced Languages*. 200-204. https://www.researchgate.net/publication/328067867_Building_Speech_Recognition_Systems_for_Language_Documentation_The_CoEDL_Endangered_Language_Pipeline_and_Inference_System_ELPIS Example: SAIGE developed by Sapia.ai
Emerging (2)	**Australia Mlops Market Size & Outlook 2025–2030**. *Grand View Horizon*. 2025. https://www.grandviewresearch.com/horizon/outlook/mlops-market/australia

3 Models & applications

The development and adaptation of models from computer vision to optimisation, and the applications that build on top of them

AI capability typology

Common language to describe and measure different types of national AI capability

Category I	Category II	Category III	Definition
2.3 Data Lifecycle Management	**3.1.4 Model & Agent Orchestration**		The capability to connect and coordinate multiple AI models, tools or agents into cohesive systems. This includes orchestration layers, middleware and agent frameworks that ensure secure interoperability, routing and governance of AI operations.
	3.1.5 Safety & Value Alignment		Models, or model ecosystems with multiple AI models, tools or agents, that comply with local ethics principles, privacy and safety regulations and societal expectations. This may entail developing an AI fabric with embedded guardrails as code.
3.2 Applications The implementation of AI models in real-world systems, tools or services to perform defined functions.	**3.2.1 General Applications**		Widely used AI-enabled software systems with cross-sectoral relevance (productivity, communication, creativity, decision support).
	3.2.2 Sector-specific Applications		AI applications designed for a particular industry or domain, embedding domain expertise and sectoral priorities.

AI maturity stocktake

Maturity rating	Existing assessments of this AI capability in Australia *(non-exhaustive)*
Emerging (2)	**Agent Engineering**. *CSIRO*. Accessed October 2025. https://research.csiro.au/ss/team/se4ai/agent-engineering Examples: C9. AI-Orchestrated Integration Workflows. https://www.c9.com.au Relevance AI https://relevanceai.com/
Not Enough Data (0)	**Designing Australia's AI safety institute: expert survey report**. *Good Ancestors*. January 2026. https://www.goodancestors.org.au/our-work/ai-safety/aisi-expert-survey
Advanced (6)	**Australia's artificial intelligence ecosystem: growth and opportunities**. *National AI Centre*. June 2025. https://www.industry.gov.au/sites/default/files/2025-06/australias-artificial-intelligence-ecosystem-growth-and-opportunities-june-2025.pdf
Established (4)	Examples: SwarmFarm Robotics; HeidiAI; Harrisson.ai

4 Innovation & adoption

The ecosystem of support and investment that drives AI innovation and commercialisation, as well as levels and culture of adoption across society

AI capability typology

Common language to describe and measure different types of national AI capability

Category I	Category II	Category III	Definition
4.1 Innovation	**4.1.1.Support & Investment Availability**		The strength of the national AI innovation ecosystem (including startups, investors, incubators, and accelerators) to support and scale commercially viable products and services, including the ability to convert research and development (R&D) into market-ready offerings.
	4.1.2 AI Native Companies		National companies developing, building, scaling and operating AI technologies, products and services at all layers of the stack.
4.2 Rate of Adoption *Adoption: the process where an organisation or individual moves beyond experimentation to intentionally and successfully integrate AI into their work to deliver measurable value (including by investing in training and establishing foundational governance and data readiness practices).*	**4.2.1 Private Sector Adoption**	**4.2.1.1 Large Enterprises**	The extent to which large enterprises adopt and integrate AI across operations, decision-making and product development.

AI maturity stocktake

Maturity rating	Existing assessments of this AI capability in Australia *(non-exhaustive)*
Emerging (2)	**Australia's artificial intelligence ecosystem: growth and opportunities**. *National Artificial Intelligence Centre, Department of Industry, Science and Resources*. 25 June 2025. https://www.industry.gov.au/publications/australias-artificial-intelligence-ecosystem-growth-and-opportunities
	Australian universities turn to AI super computers. *ACS*. 3 June 2025. https://ia.acs.org.au/article/2025/australian-universities-turn-to-ai-supercomputers.html
	Accelerating Australia's AI Agenda. Business Council of Australia. 2 June 2025. https://aiagenda.bca.com.au/
	Cut Through Quarterly Q2 2025 Report. *Cut Through Ventures*. 8 July 2025. https://www.cutthrough.com/insights/cut-through-quarterly-2q-2025
	Startup Muster 2024. *Startup Muster*. December 2024. https://www.startupmuster.com/reports
	Australia's Opportunity in the New AI Economy. *Microsoft*. 7 November 2024. https://news.microsoft.com/en-au/features/new-research-identifies-australias-most-promising-opportunities-in-the-new-global-ai-economy/
	Australia's artificial intelligence ecosystem: Catalysing an AI industry. *CSIRO*. December 2023. https://www.csiro.au/-/media/D61/AI-Ecosystem-Catalysing-an-AI-Industry-Report/Aus-AI-Ecosystem-Report-2023.pdf
	Science, research and innovation (SRI) budget tables. *Department of Industry, Science and Resources*. 18 October 2024. Updated 15 August 2025. https://www.industry.gov.au/publications/science-research-and-innovation-sri-budget-tables
	AI now fastest growing area for business R&D. *Australian Bureau of Statistics*. 22 August 2025. https://www.abs.gov.au/media-centre/media-releases/ai-now-fastest-growing-area-business-rd
	Asia/Pacific AI Maturity Study 2024. *IDC*. May 2024. https://www.intel.com/content/dam/www/central-libraries/us/en/documents/2024-05/idc-infobrief-asia-pacific-ai-maturity-study-2024-australia.pdf
	OECD Financing SMEs and Entrepreneurs Scoreboard. *OECD*. 2023. https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/03/oecd-financing-smes-and-entrepreneurs-scoreboard-2023-highlights_6060c026/a8d13e55-en.pdf
Emerging (2)	**AI Directory**. *National Artificial Intelligence Centre, Department of Industry, Science and Resources*. Accessed October 2025. https://aidirectory.industry.gov.au/directory
	Cut Through Quarterly Q2 2025 Report. *Cut Through Ventures*. 8 July 2025. https://www.cutthrough.com/insights/cut-through-quarterly-2q-2025
	Startup Muster 2024. *Startup Muster*. December 2024. https://www.startupmuster.com/reports
	Australia's artificial intelligence ecosystem: Catalysing an AI industry. *CSIRO*. December 2023. https://www.csiro.au/-/media/D61/AI-Ecosystem-Catalysing-an-AI-Industry-Report/Aus-AI-Ecosystem-Report-2023.pdf
Emerging (2)	**AI Adoption Tracker**. *National Artificial Intelligence Centre, Department of Industry, Science and Resources*. 4 June 2025. https://www.industry.gov.au/publications/ai-adoption-tracker
	Unlocking Australia's AI Potential 2025. *Amazon Web Services*. August 2025. https://www.unlockingaispotential.com/australia
	New Report Shows Aussies Embracing AI In The Workplace. *Tech Council of Australia*. July 2025. https://techcouncil.com.au/newsroom/new-report-shows-aussies-embracing-ai-in-the-workplace/
	The AI Maturity Index: Which Economies Are Ready for AI? Schwaerzler et al. *Boston Consulting Group*. November 2024. https://web-assets.bcg.com/fe/61/6962e74b44328f148c8a9ac1002d/ai-maturity-matrix-nov-2024.pdf
	Asia/Pacific AI Maturity Study 2024. *IDC*. May 2024. https://www.intel.com/content/dam/www/central-libraries/us/en/documents/2024-05/idc-infobrief-asia-pacific-ai-maturity-study-2024-australia.pdf
	2025 Cloud & Infrastructure Report: Australia. *Datacom*. 2025. https://datacom.com/au/en/solutions/cloud/insights/2025-annual-cloud-report

4 Innovation & adoption

The ecosystem of support and investment that drives AI innovation and commercialisation, as well as levels and culture of adoption across society

AI capability typology

Common language to describe and measure different types of national AI capability

Category I	Category II	Category III	Definition
4.2 Rate of Adoption *Adoption: the process where an organisation or individual moves beyond experimentation to intentionally and successfully integrate AI into their work to deliver measurable value (including by investing in training and establishing foundational governance and data readiness practices).*	**4.2.1 Private Sector Adoption**	**4.2.1.2 SMEs & Startups**	The extent to which small and medium enterprises (SME) and early stage ventures adopt and integrate AI across operations, decision-making and product development.
	4.2.2 Public Sector Adoption	**4.2.2.1 Government Adoption**	The extent to which government adopts and integrates AI across operations and service delivery.
		4.2.2.2 Defence & National Security	National Intelligence Community and Department of Defence (including the Defence Force) adoption and integration of AI across decision-making, operations and deployment of capabilities, as well as investment and support for R&D.

AI maturity stocktake

Maturity rating	Existing assessments of this AI capability in Australia *(non-exhaustive)*
Emerging (2)	**Digital Lives of Australians 2025**. *auDA* . https://files.auda.org.au/documents/Digital-Lives-of-Australians-2025-report.pdf
	National AI readiness index report 2025. *Decidr*. 2025. https://www.decidr.ai/national-ai-readiness-index-report-2025
	Startup Muster 2024. *Startup Muster*. December 2024. https://www.startupmuster.com/reports
	2025 AI Deployment and Governance Survey Report. *Governance Institute of Australia*. 2025. https://www.governanceinstitute.com.au/thought-leadership/2025-ai-deployment-and-governance-survey-report/download-report/
	Unlocking Australia's AI Potential 2025. *Amazon Web Services*. August 2025. https://www.unlockingaispotential.com/australia
	AI Adoption Tracker. *National Artificial Intelligence Centre, Department of Industry, Science and Resources*. 4 June 2025. https://www.industry.gov.au/publications/ai-adoption-tracker **Be part of the AI revolution with AI Adopt Centres**. *Department of Industry, Science and Resources*. 16 October 2024. Accessed October 2025. https://www.industry.gov.au/news/be-part-ai-revolution-ai-adopt-centres
Emerging (2)	**Government AI Readiness Index 2024**. *Oxford Insights*. 2024. https://oxfordinsights.com/ai-readiness/ai-readiness-index/
	Let's get real about AI: Insights from the first national survey on public sector attitudes towards AI. *The Mandarin and Liquid*. 10 August 2025. https://www.themandarin.com.au/297128-report-insights-from-the-first-national-survey-on-public-sector-attitudes-towards-ai/#pm_form_297128
	Unlocking the productivity dividend of digital government. *Mandala Partners and Microsoft*. September 2025. https://mandalapartners.com/uploads/Unlocking-the-productivity-dividend-of-digital-government.pdf
	Policy for the responsible use of AI in government. *Digital Transformation Agency*. May 2024. https://www.digital.gov.au/policy/ai/policy
	National framework for the assurance of artificial intelligence in government. *Department of Finance*. 21 June 2024. https://www.finance.gov.au/government/public-data/data-and-digital-ministers-meeting/national-framework-assurance-artificial-intelligence-government
	Technical standard for government's use of artificial intelligence. *Digital Transformation Agency*. September 2024. Updated 22 August 2025. https://www.digital.gov.au/policy/ai/AI-technical-standard
	Automation and Artificial Intelligence Strategy 2025-27. *Services Australia*. May 2025. https://www.servicesaustralia.gov.au/sites/default/files/2025-05/automation-and-ai-strategy-2025-27.pdf
	AI Transparency Statement. *IP Australia*. February 2025. https://www.ipaustralia.gov.au/about-us/accountability-and-reporting
	AI transparency statement. *Department of Prime Minister and Cabinet*. Accessed October 2025. https://www.pmc.gov.au/about-us/accountability-and-reporting/corporate-reporting/artificial-intelligence-ai-transparency-statement
	Australian Framework for Generative AI in Schools. *Department of Education*. 2023. https://www.education.gov.au/schooling/resources/australian-framework-generative-artificial-intelligence-ai-schools
	Governance of Artificial Intelligence at the Australian Taxation Office (Auditor-General report no. 26 of 2024–25). *Australian National Audit Office*. 24 February 2025. https://www.anao.gov.au/work/performance-audit/governance-of-artificial-intelligence-the-australian-taxation-office
	Report 510: Inquiry into the use and governance of artificial intelligence systems by public sector entities - 'Proceed with Caution'. *Joint Committee of Public Accounts and Audit, Australian Parliament*. February 2025. https://parlinfo.aph.gov.au/parlInfo/download/committees/reportjnt/RB000567/toc_pdf/Report510Inquiryintotheuseandgovernanceofartificialintelligencesystemsbypublicsectorentities-'ProceedwithCaution'.pdf
Established (4)	**2024 National Defence Strategy**. *Department of Defence*. 17 April 2024. https://www.minister.defence.gov.au/media-releases/2024-04-17/2024-national-defence-strategy
	Defence Artificial Intelligence Research Network (DAIRNet). *DAIRNet*. Accessed October 2025. https://www.dairnet.com.au/ 2024 DAIRNet Annual Report. DAIRNet. 2024. https://dairnet.lbcdn.io/uploads/2025/04/DAIRNet-Annual-Report-2024.pdf
	Defence's AI Centre hunts value in 1 billion unstructured documents. Dickinson. *ITNews*. 18 June 2025. https://www.itnews.com.au/news/defences-ai-centre-hunts-value-in-1-billion-unstructured-documents-617919
	Preliminary Inquiry – Use of Artificial Intelligence by Intelligence Agencies. *Office of the Inspector-General of Intelligence and Security*. 29 May 2024. https://www.igis.gov.au/sites/default/files/2024-06/Public%20Report%20AI%20Preliminary%20Inquiry%202024.pdf

AI capability typology

Common language to describe and measure different types of national AI capability

Category I	Category II	Category III	Definition
4.2 Rate of Adoption *Adoption: the process where an organisation or individual moves beyond experimentation to intentionally and successfully integrate AI into their work to deliver measurable value (including by investing in training and establishing foundational governance and data readiness practices).*	**4.2.3 Public Interest Adoption**	**4.2.3.1 Civil Society Adoption**	The extent to which not-for-profits and community organisations adopt AI to conduct their activities.
		4.2.3.2 Research & Academia Adoption	The extent to which research and academic communities adopt AI to conduct their activities.
	4.2.4 Inclusive AI Adoption		Extent to which individuals have access to, and have the choice to adopt and integrate AI products and services into their lives.
4.3 Culture of Adoption *(see also Social Licence in Layer 6: Governance)* *Adoption: the process where an organisation or individual moves beyond experimentation to intentionally and successfully integrate AI into their work to deliver measurable value (including by investing in training and establishing foundational governance and data readiness practices).*	**4.3.1 Discerning Adoption**		Extent to which individuals and organisations approach and choose to adopt AI in an informed, critical and responsible way.
	4.3.2 Trust & Confidence in AI Deployment *(see also 6.2.2 Ethics, Standards & Assurance Frameworks)*	**4.3.2.1 Trust & Confidence in Public Sector**	Public confidence that government use of AI will be fit for purpose, safe, reliable, easy to use, convenient and accessible, and public trust in the integrity, accountability and governance of government institutions deploying AI.
		4.3.2.2 Trust & Confidence in Private Sector	Consumer confidence that private sector AI systems will be transparent, fit for purpose, safe, reliable, easy to use, convenient and accessible, and trust in companies to deploy AI responsibly, ethically and in the interests of customers and society.
		4.3.2.3 Trust & Confidence in Public Interest Sector	Public confidence that academic, not-for-profit and media institutions use AI in ways that are transparent, fit for purpose, safe, reliable, easy to use, convenient and accessible, and trust in those institutions to deploy AI independently, responsibly and in the public interest.

AI maturity stocktake

Maturity rating	Existing assessments of this AI capability in Australia *(non-exhaustive)*
Emerging (2)	**Australian Research Council (ARC) –** AI Research Grants & Linkage Projects National-scale HPC for AI model training; offer allocations for research institutions (and, increasingly, NGOs via collaborative grants). https://pawsey.org.au/
	Australia's artificial intelligence ecosystem: growth and opportunities. *National Artificial Intelligence Centre, Department of Industry, Science and Resources*. June 2025. https://www.industry.gov.au/sites/default/files/2025-06/australias-artificial-intelligence-ecosystem-growth-and-opportunities-june-2025.pdf
Established (4)	**Australia's artificial intelligence ecosystem: growth and opportunities.** *National Artificial Intelligence Centre, Department of Industry, Science and Resources*. 25 June 2025. https://www.industry.gov.au/publications/australias-artificial-intelligence-ecosystem-growth-and-opportunities
	Universities Australia's submission to the Senate Inquiry on Adopting Artificial Intelligence. *Univerisities Australia*. 10 May 2024. https://universitiesaustralia.edu.au/wp-content/uploads/2024/05/UA-Response-to-Adopting-AI-Inquiry.pdf
Emerging (2)	**2025 Digital Citizens Report: Bridging the AI gap.** *Publicis Sapient*. October 2025. https://www.publicissapient.com/content/dam/ps-reinvent/us/en/2025/08/insights-lp/citizen-insights-hub/doc/DigitalCitizensInsights-Report-updated.pdf
	Measuring Australia's digital divide: Australian Digital Inclusion Index: 2023. ARC Centre of Excellence for Automated Decision-Making and Society, RMIT University, Swinburne University of Technology, and Telstra. 2023. https://digitalinclusionindex.org.au/
	Digital Lives of Australians 2025. *auDA*. July 2025. https://files.auda.org.au/documents/Digital-Lives-of-Australians-2025-report.pdf
Emerging (2)	**Artificial Intelligence Index Report 2025**. *Stanford University*. 2025. https://hai.stanford.edu/assets/files/hai_ai_index_report_2025.pdf
	Trust, attitudes and use of artificial intelligence: A global study 2025. *KPMG International and the University of Melbourne*. April 2025. https://mbs.edu/faculty-and-research/trust-and-ai
	Minderoo Foundation Report on Public Perceptions of AI. *Talbot Mills Research*. August 2025. https://cdn.minderoo.org/assets/documents/AI-attitudes-report-August-2025.pdf
	Survey Assessing Risks from AI: Technical Report. Saeri, Noetel and Graham. *Ready Research*, University of Queensland. 2024. https://aigovernance.org.au/
	Global Views on AI 2023. *IPSOS*.July 2023 https://www.ipsos.com/sites/default/files/ct/news/documents/2023-07/Ipsos%20Global%20AI%202023%20Report.pdf
	Digital Lives of Australians 2025. *auDA*. July 2025. https://files.auda.org.au/documents/Digital-Lives-of-Australians-2025-report.pdf
Emerging (2)	**Let's get real about AI: Insights from the first national survey on public sector attitudes towards AI**. *The Mandarin*. 10 August 2025. https://www.themandarin.com.au/297128-report-insights-from-the-first-national-survey-on-public-sector-attitudes-towards-ai/#pm_form_297128
	2025 Digital Citizens Report: Bridging the AI gap. *Publicis Sapient*. October 2025. https://www.publicissapient.com/content/dam/ps-reinvent/us/en/2025/08/insights-lp/citizen-insights-hub/doc/DigitalCitizensInsights-Report-updated.pdf
	Minderoo Foundation Report on Public Perceptions of AI. *Talbot Mills Research*. August 2025. https://cdn.minderoo.org/assets/documents/AI-attitudes-report-August-2025.pdf
	See 4.2.2.1 Government Adoption.
Emerging (2)	**Trust, attitudes and use of artificial intelligence: A global study 2025**. *KPMG International and the University of Melbourne*. April 2025. https://mbs.edu/faculty-and-research/trust-and-ai **Global Views on AI 2023**. *IPSOS*. July 2023. https://www.ipsos.com/sites/default/files/ct/news/documents/2023-07/Ipsos%20Global%20AI%202023%20Report.pdf
	Minderoo Foundation Report on Public Perceptions of AI. *Talbot Mills Research*. August 2025. https://cdn.minderoo.org/assets/documents/AI-attitudes-report-August-2025.pdf
Emerging (2)	**Minderoo Foundation Report on Public Perceptions of AI**. *Talbot Mills Research*. August 2025. https://cdn.minderoo.org/assets/documents/AI-attitudes-report-August-2025.pdf

AI capability typology

Common language to describe and measure different types of national AI capability

Category I	Category II	Definition
5.1 Skills for Building AI Infrastructure & Developing AI	**5.1.1 Skills for Building Physical AI Infrastructure**	Specialised technical skills to design, build and maintain the physical backbone of AI, from data centres and high-performance computing clusters to the networking and power systems that sustain them.
	5.1.2 Skills for Building Accelerators	Specialised skills to design, fabricate, assemble and optimise the accelerator hardware that powers AI computation – across chip design, fabrication, cooling, packaging and integration into large-scale compute clusters.
	5.1.3 AI Research Skills	Expert knowledge needed to develop new AI methods and technologies, from algorithms and architectures to safety and interpretability. These skills drive frontier research and strengthen scientific leadership in AI. Individual researcher capability. Fundamental science.
	5.1.4 AI Development & Application Skills	Technical expertise to turn AI research into real-world, reliable systems. Building and developing AI systems. This includes machine learning engineering, data pipelines, testing and verification, continuous delivery, and human-centred, secure-by-design approaches. Engineering practice.
	5.1.5 Research & Development Capabilities (translation)	Skills for scaling and translating AI into impact, the ability to convert AI research into industrial, social or policy value. Including managing collaborative R&D, navigating funding, compliance and ethics, and scaling technology through Technology Readiness Levels. Innovation and commercialisation.
	5.1.6 International AI Talent Collaborations	Skills and frameworks that enable trusted global research and workforce partnerships while safeguarding Australia's intellectual property, data and strategic interests. These collaborations build capability through shared standards, research exchange and secure mobility programs.

AI maturity stocktake

Maturity rating	Asset/policy audit of this AI capability in Australia *(non-exhaustive)*
Advanced (6)	**Empowering Australia's Digital Future**. *Mandala Partners*. October 2024. Accessed October 2025. https://www.mandalapartners.com/uploads/Empowering-Australia%27s-Digital-Future---Report_October-2024.pdf
Emerging (2)	**Australia's semiconductor manufacturing moonshot: Securing semiconductor talent**. Munro, Capri and Clark. *ASPI*. 2 November 2023. https://www.aspi.org.au/report/australias-semiconductor-manufacturing-moonshot-securing-semiconductor-talent/
	Australian Semiconductor Sector study: Capabilities, opportunities and challenges for increasing NSW's participation in the global semiconductor value chain. *University of Sydney Nano Institute for the NSW Chief Scientist & Engineer*. December 2020. https://www.chiefscientist.nsw.gov.au/__data/assets/pdf_file/0011/1415/Australian-Semiconductor-Sector-Study.pdf
Established (4)	**Meeting the AI Skills Boom**. *Tech Council of Australia*. 2024. Accessed October 2025. https://www.techcouncil.com.au/wp-content/uploads/Meeting-the-AI-Skills-Boom-2024.v2.pdf
	Australia's artificial intelligence ecosystem: growth and opportunities. *Department of Industry, Science and Resources*. June 2025. Accessed October 2025. https://www.industry.gov.au/sites/default/files/2025-06/australias-artificial-intelligence-ecosystem-growth-and-opportunities-june-2025.pdf
	Emerging trends in AI skill demand across 14 OECD countries. *Organisation for Economic Co-operation and Development*. October 2023. Accessed October 2025. https://www.oecd.org/en/publications/emerging-trends-in-ai-skill-demand-across-14-oecd-countries_7c691b9a-en.html
Emerging (2)	**Meeting the AI Skills Boom**. *Tech Council of Australia*. 2024. Accessed October 2025. https://www.techcouncil.com.au/wp-content/uploads/Meeting-the-AI-Skills-Boom-2024.v2.pdf
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	Emerging trends in AI skill demand across 14 OECD countries. *Organisation for Economic Co-operation and Development*. October 2023. Accessed October 2025. https://www.oecd.org/en/publications/emerging-trends-in-ai-skill-demand-across-14-oecd-countries_7c691b9a-en.html
Emerging (2)	**Global labour market and skills data overview**. *Lightcast*. 2025. Accessed October 2025. (no link)
	Australia's AI ecosystem: Catalysing an AI industry. *CSIRO*. December 2023. Accessed October 2025. (no link)
	Critical Technology Tracker. *Australian Strategic Policy Institute*. 2025. Accessed October 2025. https://techtracker.aspi.org.au/
	National competitive grants data portal. *Australian Research Council*. 2025. Accessed October 2025. https://dataportal.arc.gov.au/NCGP/Web/Grant/Grants
Emerging (2)	**Our GenAI Transition: Implications for Work and Skills**. *Jobs and Skills Australia*. August 2025. https://www.jobsandskills.gov.au/download/19803/our-gen-ai-transition-implications-work-and-skills/3364/our-gen-ai-transition/pdf
	Accelerating Australia's AI Agenda. *Business Council of Australia*. June 2025. http://aiagenda.bca.com.au/wp-content/uploads/2025/05/238_AI-Report_FINAL_WEB.pdf
	The Global AI Talent Tracker 2.0. *MacroPolo* (Paulson Institute Think Tank). 2024. http://www.archivemacropolo.org/interactive/digital-projects/the-global-ai-talent-tracker

AI capability typology

Common language to describe and measure different types of national AI capability

Category I	Category II	Definition
5.2 Skills for Deploying & Maintaining AI	**5.2.1 Business Transformation & Commercial Skills**	Commercial and operational skills that turn AI prototypes into real, compliant and scalable products or services. These skills cover product management, procurement, vendor governance and change management to support safe and effective adoption.
	5.2.2 Interdisciplinary & Domain Expertise	Skills to combine deep sector knowledge with cross-disciplinary insight, bringing together experts in fields like law, health, engineering, environment and social science to design AI systems that are ethical, effective and compliant. This ensures AI decisions are context-aware and grounded in real-world understanding.
5.3 Skills for Governing & Securing AI	**5.3.1 Assurance & Risk Management** (safety, bias, explainability)	Skills to test, monitor and certify AI systems throughout their lifecycle, ensuring they are safe, fair, transparent, and compliant with laws and standards. This includes risk management, bias detection, safety testing and explainability audits.
	5.3.2 Cybersecurity & Technical Robustness	Skills that keep AI systems secure, resilient, and compliant with national and international security standards. This includes secure-by-design development, data protection, threat modelling and adversarial testing to guard against attacks and misuse.
	5.3.3 Policy & Legal Skills	Skills in technology policy, privacy, intellectual property, safety and administrative law to ensure AI is governed responsibly and in line with global best practice. These skills enable rights-based, accountable policymaking and regulation across sectors, as well as effective leadership and coordination of AI governance efforts, and underpin the strategic capability required for system design, foresight or public-interest governance of AI.
5.4 Skills for Living & Working with AI *(see also adoption rate and adoption culture, Layer 4: Innovation & adoption)*	**5.4.1 General Public AI Literacy & Engagement**	Skills for people to understand and use AI safely and confidently. This includes skills to teach digital and AI literacy and education, awareness of bias and privacy, and the intergenerational capacity to question, engage with and refuse AI in daily life and at work (as appropriate).

AI maturity stocktake

Maturity rating	Asset/policy audit of this AI capability in Australia *(non-exhaustive)*
Established (4)	**Building an AI-enabled workforce: impacts for Finance, Technology and Business education and training**. *Future Skills Organisation*. February 2025. https://www.futureskillsorganisation.com.au/wp-content/uploads/2025/07/250204-AI-adoption-in-FTB-workforce-report.pdf
	2025 AI Deployment and Governance Survey Report. *Governance Institute of Australia*. April 2025. http://www.governanceinstitute.com.au/app/uploads/2025/04/AI-deployment-and-governance.pdf
	FSO Skills Accelerator-AI. *Future Skills Organisation*. Accessed October 2025. https://www.futureskillsorganisation.com.au/skills-accelerator-ai/
	Global Skills Report 2025. *Coursera Inc*. June 2025. https://assets.ctfassets.net/2pudprfttvy6/3ELFKTA8GBPBuRkNrOzmpS/24fc7ec2372d0adb96965340069f705c/Global_Skills_Report_2025.pdf
Not enough data (0)	Australia does have institutions that are actively building interdisciplinary and domain expertise for AI (UNSW, ANU, University of Adelaide).
Emerging (2)	**National Framework for the Assurance of AI in Government**. *Australian Government et al.* 2024. https://www.finance.gov.au/sites/default/files/2024-06/National-framework-for-the-assurance-of-AI-in-government.pdf
Established (4)	**Asia/Pacific AI Maturity Study 2024.** *IDC Australia / Intel Corporation*. May 2024. https://www.intel.com/content/dam/www/central-libraries/us/en/documents/2024-05/idc-infobrief-asia-pacific-ai-maturity-study-2024-australia.pdf
	Digital Pulse 2024. *Australian Computer Society (ACS) / Deloitte Access Economics*. July 2024. https://www.acs.org.au/campaign/digital-pulse/download.html?utm_source=acs&utm_medium=email&utm_campaign=TRN_DP25&deliveryName=DM28666
Established (4)	**2025 AI Deployment and Governance Survey Report**. *Governance Institute of Australia*. April 2025. https://www.governanceinstitute.com.au/app/uploads/2025/04/AI-deployment-and-governance.pdf
	Evaluating international AI skills policy: A systematic review of AI skills policy in seven countries. Rigley et al. *Global Policy*. 2023. Accessed October 2024. https://www.onlinelibrary.wiley.com/doi/pdf/10.1111/1758-5899.13299
Emerging (2)	**Digital Pulse 2024**. *Australian Computer Society (ACS) / Deloitte Access Economics*. July 2024. https://www.acs.org.au/campaign/digital-pulse/download.html?utm_source=acs&utm_medium=email&utm_campaign=TRN_DP25&deliveryName=DM28666
	Australia's artificial intelligence ecosystem: growth and opportunities. *National Artificial Intelligence Centre (NAIC) / Australian Government*. June 2025. https://www.industry.gov.au/publications/australias-artificial-intelligence-ecosystem-growth-and-opportunities

AI capability typology

Common language to describe and measure different types of national AI capability

AI maturity stocktake

Category I	Category II	Definition	Maturity rating	Asset/policy audit of this AI capability in Australia *(non-exhaustive)*
6.1 Government Strategy	**6.1.1 National AI Strategy & Leadership**	Existence and maturity of national AI strategy (vision, funding, implementation).	Established (4)	**Developing a National AI Capability Plan**. *Department for Industry Science and Resources*. 13 December 2024. Accessed October 2025. https://www.industry.gov.au/news/developing-national-ai-capability-plan
				The Global AI Index. *Tortoise Media Ranking*. Accessed October 2025. https://www.tortoisemedia.com/data/global-ai#pillars
				AI Governance International Evaluation Index (AGILE Index) 2025. *Center for Long-termArtificial Intelligence (CLAI), Beijing Institute of AI Safety and Governance (Beijing-AISI), Beijing Key Laboratory of SafeAI and Superalignment, International Research Center for AI Ethics and Governance, Institute of Automation, Chinese Academy of Sciences*. July 2025. https://agile-index.ai/AGILE-Index-Report-2025-EN.pdf
	6.1.2 Policy Coherence & Coordination	Whole-of-government policy coordination; effective integration of AI across government strategies (cyber, industrial, education, defence, foreign policy).	Emerging (2)	**Ministers for Industry, Science and Innovation**. *Department for Industry Science and Resources*. Accessed October 2025. https://www.minister.industry.gov.au/
				Minister for Finance, and Public Service. *Department of Finance*. Accessed October 2025. https://ministers.finance.gov.au/financeminister/katy-gallagher
6.2 Legal, Regulatory, Standards & Assurance Frameworks & Capabilities	**6.2.1 Legal & Regulatory Frameworks**	The existence and clarity of national laws and regulations that establish the legal obligations of AI developers, deployers and users. Includes (but not limited to) provisions for privacy, cybersecurity, safety, discrimination, accountability, liability, and mitigating systemic and catastrophic risks.	Established (4)	Government statement that existing laws apply to AI in **'Safe and responsible AI in Australia: Discussion Paper'**. *Department of Industry, Science and Resources*, June 2023. https://consult.industry.gov.au/supporting-responsible-ai
				State of AI Governance in Australia. 2023. *Human Technology Institute*. https://www.uts.edu.au/research/centres/human-technology-institute/projects/ai-corporate-governance-program/state-ai-governance-australia-report
				Introducing mandatory guardrails for AI in high-risk settings: proposals paper. *Department of Industry, Science and Resources*. Accessed October 2025. https://consult.industry.gov.au/ai-mandatory-guardrails
				AI legislation Stress Test, 2025. *Good Ancestors*. Accessed October 2025. https://www.goodancestors.org.au/our-work/ai-safety/ai-stress-test
				AI and Democratic Values Index 2025. *Centre for AI and Digital Policy*. 2025. Accessed October 2025. https://www.caidp.org/reports/caidp-index-2025/
				AI Tracker Australia. *Herbert Smith Freehills Kramer*. Accessed October 2025. https://www.hsfkramer.com/insights/reports/ai-tracker/australia
				Digital Lives of Australians 2025. *auDA*. 2025. https://files.auda.org.au/documents/Digital-Lives-of-Australians-2025-report.pdf
				A critical assessment of AI governance and policy gaps in Australia. Imran, Assaad and Choden. *ACIS 2024 Proceedings*. 2024. Accessed October 2025. https://aisel.aisnet.org/cgi/viewcontent.cgi?article=1154&context=acis2024
	6.2.2 Ethics, Standards & Assurance Frameworks	The technical and procedural mechanisms through which AI systems demonstrate compliance with laws, standards and ethical principles. Includes the development and adoption of national or international AI principles, standards, certification schemes and assurance testing capabilities.	Established (4)	**Australia's AI Ethics Principles**. *Department of Industry, Science and Resources*. 2019. Updated 11 October 2024. https://www.industry.gov.au/publications/australias-artificial-intelligence-ethics-principles
				AS ISO/IEC 42001:2023 Introduction to Standards for Artificial Intelligence. *Standards Australia*. May 2023. https://www.standards.org.au/documents/introduction-to-standards-for-artificial-intelligence?utm_medium=LP&utm_source=standards.org.au&utm_campaign=AI-landing-page-intro-ai-report-sept-2024
				Voluntary AI Safety Standard. *Department of Industry, Science and Resources; National AI Centre; CSIRO*. August 2024. https://www.industry.gov.au/sites/default/files/2024-09/voluntary-ai-safety-standard.pdf
				NSW Artificial Intelligence Assessment framework and assurance approach. *NSW Government*. Accessed October 2025 https://www.digital.nsw.gov.au/policy/artificial-intelligence/nsw-artificial-intelligence-assessment-framework
				Trust, Attitudes and Use of Artifical Intelligence: A Global Study 2025. *Australian Insights*. KPMG, University of Melbourne. https://assets.kpmg.com/content/dam/kpmgsites/au/pdf/2025/trust-in-ai-global-insights-2025-australia-snapshot.pdf.coredownload.inline.pdf

AI capability typology

Common language to describe and measure different types of national AI capability

AI maturity stocktake

Category I	Category II	Definition	Maturity rating	Asset/policy audit of this AI capability in Australia *(non-exhaustive)*
6.2 Legal, Regulatory, Standards & Assurance Frameworks & Capabilities	**6.2.3 Regulatory & Oversight Capability**	The institutional capacity of regulators and oversight bodies to implement, monitor and enforce AI-related laws and standards. Encompasses skills, resources, coordination mechanisms, and innovation-friendly approaches such as regulatory sandboxes.	Emerging (2)	**Working Paper 2: Examination of technology – Large Language Models**. *Digital Platforms Regulators Forum*. 25 October 2023. https://dp-reg.gov.au/publications/working-paper-2-examination-technology-large-language-models
				Safe and Responsible Artificial Intelligence in HealthCare – Legislation and Regulation Review. Final Report. *Department of Health, Disability and Ageing*. March 2025. https://www.health.gov.au/sites/default/files/2025-07/safe-and-responsible-artificial-intelligence-in-health-care-legislation-and-regulation-review-final-report.pdf
				Report: Clarifying and strengthening the regulation of Medical Device Software including Artificial Intelligence (AI). *Therapeutic Goods Administration*. July 2025. https://consultations.tga.gov.au/tga/clarifying-and-strengthening-the-regulation-of-ai/supporting_documents/tga-report-clarifying-and-strengthening-the-regulation-of-medical-device-software-including-artificial-intelligence-aipdf
				Guidance on privacy and the use of commercially available AI products. *Office of the Australian Information Commissioner*. 21 October 2024. Updated January 2025. https://www.oaic.gov.au/privacy/privacy-guidance-for-organisations-and-government-agencies/guidance-on-privacy-and-the-use-of-commercially-available-ai-products
				Enhanced regulatory sandboxes. *ASIC*. Accessed April 2026. https://www.asic.gov.au/for-business-and-companies/innovation-hub/enhanced-regulatory-sandbox-ers/
				Digital Platform Regulators Forum. *Australian Government Digital Platform Regulators Forum*. Accessed October 2025. https://dp-reg.gov.au/
				Beware the gap: Governance arrangements in the face of AI innovation. *ASIC*. October 2024. https://download.asic.gov.au/media/mtllqjo0/rep-798-published-29-october-2024.pdf
	6.3.1 Public Sector and Public Interest Institutional Capacity	The ability of public sector and public interest institutions to design, procure and deploy AI systems responsibly, supported by clear governance structures, dedicated leadership and ethical oversight. Includes coordination, procurement standards and workforce readiness for AI governance.	Emerging (2)	**National framework for the assurance of artificial intelligence in government**. *Australian Government*. 2024. https://www.finance.gov.au/sites/default/files/2024-06/National-framework-for-the-assurance-of-AI-in-government.pdf
				Automation and Artificial Intelligence Strategy 2025–27. *Services Australia*. Accessed October 2025. https://www.servicesaustralia.gov.au/sites/default/files/2025-05/automation-and-ai-strategy-2025-27.pdf
				NSW AI Assessment Framework and assurance approach. *NSW Government*. Accessed October 2025. https://www.digital.nsw.gov.au/policy/artificial-intelligence/nsw-artificial-intelligence-assessment-framework
6.3 Institutional Capacity to Govern AI Deployment	**6.3.2 Private Sector Institutional Capacity**	The ability of the private sector and industry bodies to implement, monitor and self-govern AI systems responsibly. Includes organisational AI ethics boards, risk assessment processes, and transparency or impact reporting practices.	Emerging (2)	**Australian Responsible AI Index**. *National AI Centre*. 26 August 2025. https://www.fifthquadrant.com.au/content/uploads/Australian-Responsible-AI-Index-2025_Full-report.pdf
				Directors' Guide to AI Governance. *Australian Institute of Company Directors*. 11 June 2024. https://www.aicd.com.au/innovative-technology/digital-business/artificial-intelligence/governance-of-ai.html
				Trust, Attitudes and Use of Artifical Intelligence: A Global Study 2025. Australia insights. *KPMG, University of Melbourne*. https://assets.kpmg.com/content/dam/kpmgsites/au/pdf/2025/trust-in-ai-global-insights-2025-australia-snapshot.pdf.coredownload.inline.pdf
				State of AI Governance in Australia Report 2023. *Human Technology Institute*. Accessed April 2026. https://www.uts.edu.au/research/centres/human-technology-institute/projects/ai-corporate-governance-program/state-ai-governance-australia-report
6.4 Civic Engagement & Democratic Legitimacy		Mechanisms ensuring that citizens, civil society and academia can meaningfully participate in shaping AI policy, governance and oversight, strengthening democratic legitimacy and accountability.	Emerging (2)	**Artificial Intelligence Index Report 2025**. *HAI Stanford University*. April 2025. https://hai.stanford.edu/assets/files/hai_ai_index_report_2025.pdf
				Copyright and Artificial Intelligence Reference Group (CAIRG). *Australian Government Attorney-General's Department*. Accessed October 2025. https://www.ag.gov.au/rights-and-protections/copyright/copyright-and-artificial-intelligence-reference-group-cairg
				The Australian Government's interim response to safe and responsible AI consultation. *Department of Industry, Science and Resources*. January 2024. https://www.industry.gov.au/news/australian-governments-interim-response-safe-and-responsible-ai-consultation
				Responsible AI Network. *National AI Centre*. Accessed October 2024 https://www.industry.gov.au/national-artificial-intelligence-centre/responsible-ai-network
				Senate Select Committee on Adopting AI hearings list (May–Sep 2024). *Parliament of Australia*. Accessed October 2024. https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Adopting_Artificial_Intelligence_AI/AdoptingAI/Public_Hearings

6 Governance

Strategies, frameworks and policies across government and the entire ecosystem that support national AI capability

AI capability typology

Common language to describe and measure different types of national AI capability

Category I	Category II	Definition
6.5 International Engagement	**6.5.1 Influence & Norm Shaping**	Capacity to influence – not merely absorb – international rules, standards and governance practices for AI. Encompasses active participation and leadership in multilateral, regional and bilateral forums; contributions to global safety, research and standards initiatives; and the ability to forge strategic partnerships for compute, data and technology access through trade, diplomatic and scientific cooperation.
	6.5.2 Access & Partnerships	Strategic partnerships for data, research and development, and technology access and export forged through trade, diplomatic and scientific cooperation.

AI maturity stocktake

Maturity rating	Asset/policy audit of this AI capability in Australia *(non-exhaustive)*
Advanced (6)	**Founding member of the International Network of AI Safety Institutes; signed the Seoul Declaration May 2024, Bletchley Declaration May 2023'**. *Department of Industry, Science and Resources*. https://www.industry.gov.au/science-technology-and-innovation/technology/artificial-intelligence/ai-safety-science#:~:text=Australia%20is%20a%20founding%20member,building%20on%20the%20Bletchley%20Declaration
	Australia joins Hiroshima AI Process Friends Group. *Department of Industry, Science and Resources*. 3 May 2024. https://www.industry.gov.au/news/australia-joins-hiroshima-ai-process-friends-group
	Active Participating Member of ISO/IEC JTC 1/SC 42 working groups and committees Artificial intelligence. https://www.iso.org/committee/6794475.html
	OECD AI Policy Observatory / Global Partnership on AI (GPAI) Member (including responsible AI and data-governance working groups). Accessed October 2025. https://oecd.ai/en/about/about-gpai
	Long history of particpating in tech related multilateral norms processes, for example at the United Nations and ASEAN. Multilateral Engagement in Cyber Affairs and Critical Technology. https://www.dfat.gov.au/international-relations/themes/cyber-affairs-and-critical-technology/multilateral-engagement
Emerging (2)	**AUKUS Agreement: Pillar 2 (Advanced Capabilities)**. *Department of Prime Minister and Cabinet*. Accessed October 2024. https://pmtranscripts.pmc.gov.au/sites/default/files/AUKUS-factsheet.pdf
	Memorandum of understanding on cooperation on artificial intelligence between Australia and Singapore. *Department of Industry, Science and Resources*. December 2024. Accessed October 2025. https://www.industry.gov.au/publications/memorandum-understanding-cooperation-artificial-intelligence-between-australia-and-singapore
	Capacity Building (2024-2028 Southeast Asia and Pacific Cyber Program). Accessed April 2026. *Department of Foreign Affairs and Trade*. https://www.dfat.gov.au/international-relations/themes/cyber-affairs-and-critical-technology/capacity-building
	India Partnership (Australia-India Cyber and Critical Technology Partnership). *Department of Foreign Affairs and Trade*. Accessed April 2026. https://www.dfat.gov.au/international-relations/themes/cyber-affairs-and-critical-technology/india-partnership
	Australia and UK build on their critical technology partnership. *Department of Industry, Science and Resources*. 10 September 2024. https://www.industry.gov.au/news/australia-and-uk-build-their-critical-technology-partnership
	EU Australia Framework Agreement and Science and Technology Cooperation Agreement. *European Commission*. Accessed April 2026. https://research-and-innovation.ec.europa.eu/strategy/strategy-research-and-innovation/europe-world/international-cooperation/bilateral-cooperation-science-and-technology-agreements-non-eu-countries/australia_en


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