TECH POLICY
DESIGN INSTITUTE

AI AGENCY TOOL

AUSTRALIAN STOCKTAKE

DISCUSSION DRAFT

We propose a shift from discussions of 'AI sovereignty' to 'AI agency'. Doing so reframes the debate: from asking whether a country has wholesale 'sovereignty over AI', to asking whether a country' combination of capabilities produces the net agency, power and opportunity to steer outcomes, protect its national interests, and capture value in a globally connected system.

Here we apply TPDi's draft AI Agency Tool to Australia's AI capabilities in November 2025. We seek your feedback on both the design of the Tool and the accuracy of its application to Australia today. Have your say by 15 December 2025 at www.techpolicy.au/ai_agency

November 2025

Layer 1: 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

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).

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AI MATURITY | **AI AGENCY** | **AI POWER** | **AI OPPORTUNITY**

STOCKTAKE | **SPECTRUM** | **ASSESSMENT** | **FORECAST**

Snapshot of Available Assessments

The Access, Control, Choice or Leverage of a National 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 score in the AI Power Assessment.

***Current* AI Power**
What competitive advantage a country currently has based on existing level of capability, agency over that capability, and how hard that capability is to come by globally.

***Potential* AI Opportunity**
The relative difficulty and policy trade offs associated with increasing the current AI Power in a particular capability area, as compared to other capabilities

See Stocktake Sheet for this layer for source of maturity score

Mix of international and domestic capability (Choice/Resilience)

International capability available within jurisdiction (Access)

Domestic capability (Control)

Export Capability (Leverage)

Maturity: existence and level of current national capability based on AI Maturity Stocktake

Agency: over current national capability based on AI Agency Spectrum

Scarcity: of capability on a global level (i.e How many other countries have this capability?)

SCORE: Snapshot in time, based on assumptions in the Stocktake, Spectrum and Assessment being correct.

Feasibility: of increasing national capability given current AI power

Desirability: of *increasing* maturity in this area, based on net +ve & -ve externalities and trade-offs (a normative assessment, in this case completed by TFDi)

SCORE: The combination of the Feasibility and Desirability of increasing AI Power in a particular area

Category I	Category II	Category III	Category IV	Definitions	Examples *Not Exhaustive, Illustrative Only*	Indicators	**Dark Grey** - Not Enough Data **Shades of Pink** (light to dark) None - no identifiable capability Emerging - early signs of progress towards some capability Established - capability exists (quality variable) Advanced - high quality capability exists and is widely available	Subject to extrajaudicial 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 organisations (full weight)	Controlled by the government (full weight)	Used by other countries (full weight)	**Maturity** ***Weighting*** **None** (0) **Emerging** (2) **Established** (4) **Advanced** (6) *Scored out of 6 to give double weight to current capability*	**Agency** ***Weighting*** 0 on Spectrum = **No Agency** (0) Up to one third of boxes on Spectrum = **Low Agency** (2) Half of boxes on Spectrum = **Medium Agency** (4) More than two thirds of boxes on Spectrum = **High Agency** (6) *Scored out of 6 to give double weight to current capability*	**Scarcity** ***Weighting*** **Most Countries** (0) **Many Countries** (1) **Few Countries** (2) **Very Few Countries** (3)	**SCORE** ***Weighting*** **V low power** = 0-4 **Low power** = 5-8 **Some power** = 9-12 **High power** = 13-15	**Feasibility** ***Weighting*** **Not Feasible** (0) **Feasible w big effort** (1) **Feasible w some effort** (2) **Readily Achievable** (3)	**Desirability** ***Weighting*** High Net -ve Externalities (0) Low Net -ve Externalities (1) Low Net +ve Externalities (2) High Net +ve Externalities (3)	**SCORE** ***Weighting*** No Opportunity (0) Low Opportunity (2) Some Opportunity (4) High Opportunity (6)
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	☐	☑	☑	☑	☑	☑	Established (4)	High Agency (6)	Many Countries (1)	Some Power (11)	Feasible w Some Effort (2)	Low Net -ve Externalities (1)	Some Opportunity (3)
	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).	# and scale of local cloud clusters Availability and cluster sizes of advanced chips known as accelerators (such as GPUs like NVIDIA H100 or equivalents) Approx # of H100-equivalent accelerators	Established	☐	☑	☑	N/A	N/A	☐	Established (4)	Medium Agency (4)	Few Countries (2)	Some Power (10)	Feasible w Big Effort (1)	Low Net -ve Externalities (1)	Low Opportunity (2)
			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.	# of local clusters, # of accelerators Total private compute capacity in H100 equivalents Investment in private AI infrastructure	Emerging	☑	☑	☑	N/A	N/A	☐	Emerging (2)	Medium Agency (4)	Few Countries (2)	Low Power (8)	Feasible w Big Effort (1)	Low Net -ve Externalities (1)	Low Opportunity (2)
		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.	# and scale of publicly owned AI training-capable HPC clusters Availability and cluster sizes of accelerators # of H100-equivalent accelerators Top500 /Top100 world rankings Compute hours accessible to public interest research	Emerging	N/A	N/A	N/A	☑	☑	☐	Emerging (2)	Medium Agency (4)	Few Countries (2)	Low Power (8)	Feasible w Big Effort (1)	Low Net +ve Externalities (2)	Some Opportunity (3)
			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	N/A	N/A	N/A	☑	☑	☐	Emerging (2)	Medium Agency (4)	Few Countries (2)	Low Power (8)	Feasible w Big Effort (1)	Low Net +ve Externalities (2)	Some Opportunity (3)

Layer 1: Infrastructure & Resources: the physical underpinning of AI power: compute, data centres, supply chains and natural resources.							Layer 1: Infrastructure & Resources: the physical underpinning of AI power: compute, data centres, supply chains and natural resources.														
AI CAPABILITY							AI MATURITY	AI AGENCY						AI POWER				AI OPPORTUNITY			
TYPOLOGY							STOCKTAKE	SPECTRUM						ASSESSMENT				FORECAST			
Common language to describe and measure different types of national AI capability							Snapshot of Available Assessments	**The Access, Control, Choice or Leverage of a National 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 score in the AI Power Assessment.						***Current* AI Power** What competitive advantage a country currently has based on existing level of capability, agency over that capability, and how hard that capability is to come by globally.				***Potential* AI Opportunity** The relative difficulty and policy trade offs associated with increasing the current AI Power in a particular capability area, as compared to other capabilities		
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).							**See Stocktake Sheet for this layer for source of maturity score**	**Mix of international and domestic capability** (Choice/Resilience)					**Export Capability** (Leverage)	**Maturity**	**Agency**	**Scarcity**	**SCORE**	**Feasibility**	**Desirability**	**SCORE**
								International capability available within jurisdiction (Access)	**Domestic capability** (Control)												
														existence and level of current national capability based on AI Maturity Stocktake	over current national capability based on AI Agency Spectrum	of capability on a global level (i.e How many other countries have this capability?)	Snapshot in time, based on assumptions in the Stocktake, Spectrum and Assessment being correct.	of increasing national capability given current AI power	of *increasing* maturity in this area, based on net +ve & -ve externalities and trade-offs (a normative assessment, in this case completed by TFDi)	The combination of the Feasibility and Desirability of increasing AI Power in a particular area
Category I	**Category II**	**Category III**	**Category IV**	**Definitions**	**Examples** *Not Exhaustive, Illustrative Only*	**Indicators**	**Dark Grey** - Not Enough Data **Shades of Pink** (light to dark) None - no identifiable capability Emerging - early signs of progress towards some capability Established - capability exists (quality variable) Advanced - high quality capability exists and is widely available	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)	***Weighting*** **None** (0) **Emerging** (2) **Established** (4) **Advanced** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** 0 on Spectrum = **No Agency** (0) Up to one third of boxes on Spectrum = **Low Agency** (2) Half of boxes on Spectrum = **Medium Agency** (4) More than two thirds of boxes on Spectrum = **High Agency** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** **Most Countries** (0) **Many Countries** (1) **Few Countries** (2) **Very Few Countries** (3)	***Weighting*** **V low power** = 0-4 **Low power** = 5-8 **Some power** = 9-12 **High power** = 13-15	***Weighting*** **Not Feasible** (0) **Feasible w big effort** (1) **Feasible w some effort** (2) **Readily Achievable** (3)	***Weighting*** High Net -ve Externalities (0) Low Net -ve Externalities (1) Low Net +ve Externalities (2) High Net +ve Externalities (3)	***Weighting*** No Opportunity (0) Low Opportunity (2) Some Opportunity (4) High Opportunity (6)
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.	**1.1.2.2 Public Sector & Public Interest Training Compute**	**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.	# of active agreements Guaranteed compute hours Reciprocity terms and security terms	Emerging	☐	☑	N/A	☑	☑	☑	Emerging (2)	High Agency (6)	Few Countries (2)	Some Power (10)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
		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).	# and scale of local cloud clusters Geographic distribution of inferencing capacity (relevant to latency) # of accelerators	Established	☐	☑	☑	N/A	N/A	☑	Established (4)	High Agency (6)	Many Countries (1)	Some Power (11)	Feasible w Some Effort (2)	Low Net -ve Externalities (1)	Some Opportunity (3)
			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 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.	# of commercial edge deployments Coverage and density of edge compute sites (relevant to latency) Volume of inferencing operations (per second)	Emerging	☑	☑	☑	N/A	N/A	☑	Emerging (2)	High Agency (6)	Many Countries (1)	Some Power (9)	Feasible w Some Effort (2)	Low Net +ve Externalities (2)	Some Opportunity (4)
			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.	# of corporate inferencing clusters # of accelerators	Emerging	☑	☑	☑	N/A	N/A	☐	Emerging (2)	Medium Agency (4)	Many Countries (1)	Low Power (7)	Feasible w Some Effort (2)	Low Net +ve Externalities (2)	Some Opportunity (4)
		1.1.3.2 Public Sector & Public Interest Inferencing Compute	**1.1.3.2.1 Public Sector & Public Interest High-performance Inferencing Compute Clusters**	HPC systems equipped for large-scale public sector or public interest inferencing, typically used in research, environmental modelling or national security contexts.	Bureau of Meteorology (BoM) – Cray / HPE supercomputing environment; National Computational Infrastructur (NCI); National Security HPC environment e.g. Defence Supercomputing Capability.	# and scale of publicly owned inferencing-capable HPC clusters Availability and cluster sizes of accelerators # of accelerators Compute hours accessible to public interest research	Emerging	N/A	N/A	N/A	☑	☑	☑	Emerging (2)	High Agency (6)	Many Countries (1)	Some Power (9)	Feasible w Some Effort (2)	Low Net +ve Externalities (2)	Some Opportunity (4)
			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.	# of active public edge sites Coverage (urban/rural) Volume of inferencing operations (per second)	Established	N/A	N/A	N/A	☑	☑	☐	Established (4)	Medium Agency (4)	Many Countries (1)	Some Power (9)	Feasible w Big Effort (1)	Low Net +ve Externalities (2)	Some Opportunity (3)

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		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	Advanced	✓	✓	✓	N/A	N/A	☐	Advanced (6)	Medium Agency (4)	Most Countries (0)	Some Power (10)	Feasible w Some Effort (2)	Low Net +ve Externalities (2)	Some Opportunity (4)
	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)	Established	✓	✓	✓	✓	✓	✓	Established (4)	High Agency (6)	Many Countries (1)	Some Power (11)	Feasible w Some Effort (2)	Low Net -ve Externalities (1)	Some Opportunity (3)

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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	Advanced	✓	✓	✓	☐	✓	✓	Advanced (6)	High Agency (6)	Very Few Countries (3)	High Power (15)	N/A (3)	N/A (3)	High Opportunity (6)
		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 # of active extraction projects	Established	✓	✓	✓	☐	✓	✓	Established (4)	High Agency (6)	Very Few Countries (3)	High Power (13)	Feasible w Some Effort (2)	High Net -ve Externalities (0)	Low Opportunity (2)
		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 WA and Malaysia.	# of active extraction Refinement throughput (tonnes/year)	Emerging	✓	☐	✓	☐	✓	✓	Emerging (2)	Medium Agency (4)	Very Few Countries (3)	Some Power (9)	Feasible w Big Effort (1)	High Net -ve Externalities (0)	Low Opportunity (1)
	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 design is done locally while the physical chips are made offshore.	Design firms developing AI accelerators, such as NVIDIA; d-Matrix; Broadcom; AMD.	# of local design teams # of AI-related patents held R&D investment Partnerships for offshore fabrication and packaging	Emerging	☐	✓	✓	☐	☐	☐	Emerging (2)	Low Agency (2)	Few Countries (2)	Low Power (6)	Feasible w Some Effort (2)	Low Net +ve Externalities (2)	Some Opportunity (4)
		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).	# of units assembled or packaged annually # of companies or fabrication facilities Semiconductor fabrication patents	None	✓	✓	☐	☐	☐	☐	None (0)	Low Agency (2)	Very Few Countries (3)	Low Power (5)	Feasible w Big Effort (1)	Low Net +ve Externalities (2)	Some Opportunity (3)
		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.	# of packaging and testing facilities operating domestically # of AI-grade chips packaged annually	None	☐	☐	✓	☐	☐	☐	None (0)	Low Agency (2)	Very Few Countries (3)	Low Power (5)	Feasible w Some Effort (2)	Low Net +ve Externalities (2)	Some Opportunity (4)
	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 MOU on AI and advanced connectivity technologies.	# of agreements Diversity of supply partners	Not Enough Data	☐	☐	☐	☐	☐	☐	Not Enough Data (0)	No Agency (0)	Few Countries (2)	Very Low Power (2)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)

Layer 1: 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

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	Definitions	Examples *Not Exhaustive, Illustrative Only*	Indicators
	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, eg. 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.	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)
	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, redunancy 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.	# of active international cables Aggregate cable capacity (Tbps) Geographical diversity of landing sites

Layer 1: Infrastructure & Resources: the physical underpinning of AI power: compute, data centres, supply chains and natural resources.

AI MATURITY | **AI AGENCY** | **AI POWER** | **AI OPPORTUNITY**

STOCKTAKE | **SPECTRUM** | **ASSESSMENT** | **FORECAST**

Snapshot of Available Assessments

The Access, Control, Choice or Leverage of a National 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 score in the AI Power Assessment.

***Current* AI Power**
What competitive advantage a country currently has based on existing level of capability, agency over that capability, and how hard that capability is to come by globally.

***Potential* AI Opportunity**
The relative difficulty and policy trade offs associated with increasing the current AI Power in a particular capability area, as compared to other capabilities

See Stocktake Sheet for this layer for source of maturity score

Mix of international and domestic capability (Choice/Resilience)

International capability available within jurisdiction (Access)

Domestic capability (Control)

Export Capability (Leverage)

Dark Grey - Not Enough Data
Shades of Pink (light to dark)
None - no identifiable capability
Emerging - early signs of progress towards some capability
Established - capability exists (quality variable)
Advanced - high quality capability exists and is widely available

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)	**Maturity**	**Agency**	**Scarcity**	**SCORE**	**Feasibility**	**Desirability**	**SCORE**
						existence and level of current national capability based on AI Maturity Stocktake	over current national capability based on AI Agency Spectrum	of capability on a global level (i.e How many other countries have this capability?)	Snapshot in time, based on assumptions in the Stocktake, Spectrum and Assessment being correct.	of increasing national capability given current AI power	of *increasing* maturity in this area, based on net +ve & -ve externalities and trade-offs (a normative assesment, in this case completed by TPDI)	The combination of the Feasibility and Desirability of increasing AI Power in a particular area
						Weighting **None** (0) **Emerging** (2) **Established** (4) **Advanced** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** 0 on Spectrum = **No Agency** (0) Up to one third of boxes on Spectrum = **Low Agency** (2) Half of boxes on Spectrum = **Medium Agency** (4) More than two thirds of boxes on Spectrum = **High Agency** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** **Most Countries** (0) **Many Countries** (1) **Few Countries** (2) **Very Few Countries** (3)	***Weighting*** **V low power** = 0-4 **Low power** = 5-8 **Some power** = 9-12 **High power** = 13-15	***Weighting*** **Not Feasible** (0) **Feasible w big effort** (1) **Feasible w some effort** (2) **Readily Achievable** (3)	***Weighting*** High Net -ve Externalities (0) Low Net -ve Externalities (1) Low Net +ve Externalities (2) High Net +ve Externalities (3)	***Weighting*** No Opportunity (0) Low Opportunity (2) Some Opportunity (4) High Opportunity (6)
	☐	☑	☑	☑	☐	☐	Established (4)	Medium Agency (4)	Many Countries (1)	Some Power (9)	Feasible w Some Effort (2)	Low Net +ve Externalities (2)	Some Opportunity (4)
Established	☐	☑	☑	☐	☑	☐	Established (4)	Medium Agency (4)	Most Countries (0)	Low Power (8)	Feasible w Some Effort (2)	Low Net -ve Externalities (1)	Some Opportunity (3)
Established	☐	☑	☑	☐	☑	☐	Established (4)	Medium Agency (4)	Most Countries (0)	Low Power (8)	Feasible w Big Effort (1)	Low Net -ve Externalities (1)	Low Opportunity (2)
Established	☐	☑	☑	☑	☑	☐	Established (4)	Medium Agency (4)	Most Countries (0)	Low Power (8)	Feasible with Big Effort (1)	High Net +ve Externalities (3)	Some Opportunity (4)
Established	☐	☑	☑	☐	☐	☑	Established (4)	Medium Agency (4)	Few Countries (2)	Some Power (10)	Feasible w Big Effort (1)	High Net +ve Externalities (3)	Some Opportunity (4)

Layer 1: Infrastructure & Resources: the physical underpinning of AI power: compute, data centres, supply chains and natural resources.							Layer 1: Infrastructure & Resources: the physical underpinning of AI power: compute, data centres, supply chains and natural resources.												
AI CAPABILITY							**AI MATURITY**	**AI AGENCY**						**AI POWER**				**AI OPPORTUNITY**		
TYPOLOGY							**STOCKTAKE**	**SPECTRUM**						**ASSESSMENT**				**FORECAST**		
Common language to describe and measure different types of national AI capability							**Snapshot of Available Assessments**	**The Access, Control, Choice or Leverage of a National 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 score in the AI Power Assessment.						***Current* AI Power** What competitive advantage a country currently has based on existing level of capability, agency over that capability, and how hard that capability is to come by globally.				***Potential* AI Opportunity** The relative difficulty and policy trade offs associated with increasing the current AI Power in a particular capability area, as compared to other capabilities		
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).							**See Stocktake Sheet for this layer for source of maturity score**	**Mix of international and domestic capability** (Choice/Resilience)				**Export Capability** (Leverage)	**Maturity**	**Agency**	**Scarcity**	**SCORE**	**Feasibility**	**Desirability**	**SCORE**
								International capability available within jurisdiction (Access)	**Domestic capability** (Control)										
								existence and level of current national capability based on AI Maturity Stocktake	over current national capability based on AI Agency Spectrum	of capability on a global level (i.e How many other countries have this capability?)	Snapshot in time, based on assumptions in the Stocktake, Spectrum and Assessment being correct.	of increasing national capability given current AI power	of *increasing* maturity in this area, based on net +ve & -ve externalities and trade-offs (a normative assessment, in this case completed by TFDi)	The combination of the Feasibility and Desirability of increasing AI Power in a particular area
Category I	**Category II**	**Category III**	**Category IV**	**Definitions**	**Examples** *Not Exhaustive, Illustrative Only*	**Indicators**	**Dark Grey** - Not Enough Data **Shades of Pink** (light to dark) None - no identifiable capability Emerging - early signs of progress towards some capability Established - capability exists (quality variable) Advanced - high quality capability exists and is widely available	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)	***Weighting*** **None** (0) **Emerging** (2) **Established** (4) **Advanced** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** 0 on Spectrum = **No Agency** (0) Up to one third of boxes on Spectrum = **Low Agency** (2) Half of boxes on Spectrum = **Medium Agency** (4) More than two thirds of boxes on Spectrum = **High Agency** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** **Most Countries** (0) **Many Countries** (1) **Few Countries** (2) **Very Few Countries** (3)	***Weighting*** **V low power** = 0-4 **Low power** = 5-8 **Some power** = 9-12 **High power** = 13-15	***Weighting*** **Not Feasible** (0) **Feasible w big effort** (1) **Feasible w some effort** (2) **Readily Achievable** (3)	***Weighting*** High Net -ve Externalities (0) Low Net -ve Externalities (1) Low Net +ve Externalities (2) High Net +ve Externalities (3)	***Weighting*** No Opportunity (0) Low Opportunity (2) Some Opportunity (4) High Opportunity (6)
1.3 Supporting Infrastructure & Resources	**1.3.3 Water Supply**			The availability, reliability and sustainability of water resources and inovation 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 % of recycled or reclaimed water used	Emerging	☐	☑	☑	☐	☑	☐	Emerging (2)	Medium Agency (4)	Many Countries (1)	Low Power (7)	Feasible w Some Effort (2)	High Net -ve Externalities (0)	Low Opportunity (2)
	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	Established	☑	☑	☑	☑	☑	☐	Established (4)	High Agency (6)	Many Countries (1)	Some Power (11)	Feasible w Big Effort (1)	High Net -ve Externalities (0)	Low Opportunity (1)
	1.3.5 Permitting and 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	Established	N/A	N/A	N/A	N/A	☑	N/A	Established (4)	High Agency (6)	Few Countries (2)	Some Power (12)	Feasible w Big Effort (1)	Low Net +ve Externalities (2)	Some Opportunity (3)

Layer 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					AI MATURITY	AI AGENCY						AI POWER				AI OPPORTUNITY		
TYPOLOGY					STOCKTAKE	SPECTRUM						ASSESSMENT				FORECAST		
Common language to describe and measure different types of national AI capability					Snapshot of Available Assessments	The Access, Control, Choice or Leverage of a National 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 score in the AI Power Assessment.						*Current* AI Power What competitive advantage a country currently has based on existing level of capability, agency over that capability, and how hard that capability is to come by globally.				*Potential* AI Opportunity The relative difficulty and policy tracte offs associated with increasing the current AI Power in a particular capability area, as compared to other capabilities		
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. 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 and 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.					Identified through roundtable consultations, survey responses, and peer review.	Mix of international and domestic capability (Choice/Resilience)					Export Capability (Leverage)	Maturity	Agency	Scarcity	SCORE	Feasibility	Desirability	SCORE
						International capability available within jurisdiction (Access)		Domestic capability (Control)				existence and level of current national capability based on AI Maturity Stocktake	over current national capability based on AI Agency Spectrum	of capability on a global level (i.e How many other countries have this capability?)	Snapshot in time, based on assumptions in the Stocktake, Spectrum and Assessment being correct.	of increasing national capability given current AI power	of *increasing* maturity in this area, based on net +ve & -ve externalities and trade-offs (a normative assessment, in this case completed by TPDi)	The combination of the Feasibility and Desirability of increasing AI Power in a particular area
Category I	**Category II**	**Definitions**	**«Examples** *Not Exhaustive, Illustrative Only»*	**Indicators**	**Dark Grey** - Not Enough Data **Shades of Pink** (light to dark) Noize - no identifiable capability Emerging - early signs of progress towards some capability Established - capability exists (quality variable) Advanced - high quality capability exists and is widely available	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)	Australia's data capabilities are used by other countries (full weight)	***Weighting*** **None** (0) **Emerging** (2) **Established** (4) **Advanced** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** 0 on Spectrum = **No Agency** (0) Up to one third of boxes on Spectrum = **Low Agency** (2) Half of boxes on Spectrum = **Medium Agency** (4) More than two thirds of boxes on Spectrum = **High Agency** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** **Most Countries** (0) **Many Countries** (1) **Few Countries** (2) **Very Few Countries** (3)	***Weighting*** **V low power** = 0-4 **Low power** = 5-8 **Some power** = 9-12 **High power** = 13-15	***Weighting*** **Not Feasible** (0) **Feasible w big effort** (1) **Feasible w some effort** (2) **Readily Achievable** (3)	***Weighting*** High Net -ve Externalities (0) Low Net -ve Externalities (1) Low Net +ve Externalities (2) High Net +ve Externalities (3)	***Weighting*** No Opportunity (0) Low Opportunity (2) Some Opportunity (4) High Opportunity (6)
2.1 Committtment 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.	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).	# of partnerships in place between Indigenous representatives and government organisations to guide the improved collections, access, management and use of data to inform shared decision-making for the benefit of Indigenous people. Evidence of adherance to the FAIR and CARE Principles in all stages of Data lifecycle Management (see below).	Emerging	☐	☐	☑	☑	☑	☐	Emerging (2)	Medium Agency (4)	Very Few Countries (3)	Some Power (9)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
2.2 Domain Specific Datasets This can include non-Australia data that is a valuable input for the development and deployment of AI capabilities	**2.2.1 Language, Arts, Cultural and History**	Datasets capturing linguistic, creative, cultural, multicultural, ethnic, and historical expression, including large-scale text and speech corpora, First Nations language materials, audiovisual and heritage archives, social media, and media subtitling or transcription data.	Trove (National Libarary of Australia); AUSTLANG (AIATSIS) – National Indigenous language catalogue and metadata repository. National Archive; LDaCa Language Data Commons of Australia.	Coverage, inclusion and digitisation of Cultural & language corpora.	Established	☑	☑	☑	☑	☑	☐	Established (4)	High Agency (6)	Very Few Countries (3)	High Power (13)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
	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) (DoHAC); Australian Immunisation Register (AIR) (Services Australia); National Hospital Morbidity Database (AIHW); Australian Genomics Health Alliance datasets (NCRIS/AGHA).	Population-level representativeness of health datasets (e.g. completeness across age, gender, region, Indigenous status).	Advanced	☐	☑	☑	☑	☑	☐	Advanced (6)	Medium Agency (4)	Many Countries (1)	Some Power (11)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
	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 (ANZLIC & GA).	Spatial granularity and temporal refresh rate of national mapping datasets (e.g. resolution ≤1 m, update frequency ≤12 months).	Advanced	☐	☑	☑	☑	☑	☑	Advanced (6)	High Agency (6)	Many Countries (1)	High Power (13)	Readily Achievable (3)	High Net +ve Externalities (3)	High Opportunity (6)
	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 (BoM/WIRADA); Australian Mineral Deposits Database & AIMR (Geoscience Australia); AREMI – Renewable energy mapping datasets.	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).	Advanced	☐	☐	☑	☑	☑	☑	Advanced (6)	Medium Agency (4)	Very Few Countries (3)	High Power (13)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
	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 (RBA); ABS Business Characteristics Survey; Resources and Energy Quarterly (DISR).	Timeliness and disaggregation of national economic microdata (e.g. frequency of updates, industry-level granularity).	Established	☐	☑	☑	☐	☑	☐	Established (4)	Medium Agency (4)	Many Countries (1)	Some Power (9)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
	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.	Not Enough Data (0)	☑	☑	☑	☐	☐	☐	Not Enough Data (0)	Medium Agency (4)	Few Countries (2)	Lower Power (6)	Feasible w big effort (1)	High Net +ve Externalities (3)	Some Opportunity (4)

Standardised Metadata schema
Federated compliance & scalability (legal and institutional interoperability)
FAIR compliance (Findable, Accessible, Iteroperable, Reusable)
CARE compliance (collective benefit, Authority to control, Responsibility & Ethics)
Provenane & Lineage tracking
Consent Frameworks
Onshore hosting and secure processing environments (e.g., SURE).
Clear licencing
Longevity and version control
Domain specific data standards
Machine readiness formatting

LAYER 2: DATA ASSETS & LIFECYCLE MANAGEMENT

Layer 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

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. 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 and 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.

Category I	Category II	Definitions	«Examples *Not Exhaustive, Illustrative Only*»	Indicators
2.2 Domain Specific Datasets This can include non-Australia data that is a valuable input for the development and deployment of AI capabilities	**2.2.7 Scientific, Synthetic and 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.	ARDC "Synthetic Data for Research" initiative, WA 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.	Atlas of Living Australia (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) (NCVER); 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, and asset inventories critical for national resilience and automation.	National Road and Rail Datasets (Geoscience Australia); BITRE Aviation Statistics (Infrastructure); Energy Grid Telemetry Data / AREMI layers (ARENA & AEMO); ACCC Mobile Infrastructure Data Releases.	Real-time data availability (e.g., traffic or grid feeds). % 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 (Finance); Taxation Statistics (ATO). Administrative Appeals Tribunal Decision Register; Open Government Data Portal (data.gov.au) and curated administrative releases, access to NHS data.	Integration with cross-government data sharing frameworks (DATT Act).

Layer 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 MATURITY | **AI AGENCY** | **AI POWER** | **AI OPPORTUNITY**

STOCKTAKE | **SPECTRUM** | **ASSESSMENT** | **FORECAST**

Snapshot of Available Assessments

The Access, Control, Choice or Leverage of a National 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 score in the AI Power Assessment.

***Current* AI Power**
What competitive advantage a country currently has based on existing level of capability, agency over that capability, and how hard that capability is to come by globally.

***Potential* AI Opportunity**
The relative difficulty and policy trade offs associated with increasing the current AI Power in a particular capability area, as compared to other capabilities

Identified through roundtable consultations, survey responses, and peer review.	Mix of international and domestic capability (Choice/Resilience)					Export Capability (Leverage)	Maturity	Agency	Scarcity	SCORE	Feasibility	Desirability	SCORE
	International capability available within jurisdiction (Access)		Domestic capability (Control)										
Dark Grey - Not Enough Data **Shades of Pink** (light to dark) None - no identifiable capability Emerging - early signs of progress towards some capability Established - capability exists (quality variable) Advanced - high quality capability exists and is widely available	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)	Australia's data capabilities are used by other countries (full weight)	existence and level of current national capability based on AI Maturity Stocktake	over current national capability based on AI Agency Spectrum	of capability on a global level (i.e How many other countries have this capability?)	Snapshot in time, based on assumptions in the Stocktake, Spectrum and Assessment being correct.	of increasing national capability given current AI power	of *increasing* maturity in this area, based on net +ve & -ve externalities and trade-offs (a normative assessment, in this case completed by TPDi)	The combination of the Feasibility and Desirability of increasing AI Power in a particular area
Not Enough Data (0)	☑	☑	☑	☑	☐	☑	Not Enough Data (0)	High Agency (6)	Few Countries (2)	Low Power (8)	Feasible w Some Effort (2)	Low Net +ve Externalities (2)	Some Opportunity (4)
Not Enough Data (0)	☑	☑	☑	☑	☐	☐	Not Enough Data (0)	Medium Agency (4)	Many Countries (1)	Low Power (5)	Readily Achievable (3)	Low Net -ve Externalities (1)	Some Opportunity (4)
Advanced	N/A	N/A	☑	☐	☑	☐	Advanced (6)	Medium Agency (4)	Very Few Countries (3)	High Power (13)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
Advanced	☐	☑	☐	☑	☑	☐	Advanced (6)	Medium Agency (4)	Very Few Countries (3)	High Power (13)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
Emerging	☐	☑	N/A	N/A	☑	☐	Emerging (2)	Medium Agency (4)	Very Few Countries (3)	Some Power (9)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)

Maturity
Weighting
None (0)
Emerging (2)
Established (4)
Advanced (6)
Scored out of 6 to give double weight to current capability

Agency
Weighting
0 on Spectrum = **No Agency** (0)
Up to one third of boxes on Spectrum = **Low Agency** (2)
Half of boxes on Spectrum = **Medium Agency** (4)
More than two thirds of boxes on Spectrum = **High Agency** (6)
Scored out of 6 to give double weight to current capability

Scarcity
Weighting
Most Countries (0)
Many Countries (1)
Few Countries (2)
Very Few Countries (3)

SCORE
Weighting
V low power = 0-4
Low power = 5-8
Some power = 9-12
High power = 13-15

Feasibility
Weighting
Not Feasible (0)
Feasible w some effort (2)
Readily Achievable (3)

Desirability
Weighting
High Net -ve Externalities (0)
Low Net -ve Externalities (1)
Low Net +ve Externalities (2)
High Net +ve Externalities (3)

SCORE
Weighting
No Opportunity (0)
Low Opportunity (2)
Some Opportunity (4)
High Opportunity (6)

Layer 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

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. 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 and 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.

Layer 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 MATURITY

STOCKTAKE

Snapshot of Available Assessments

Identified through roundtable consultations, survey responses, and peer review.

AI AGENCY

SPECTRUM

The Access, Control, Choice or Leverage of a National 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 score in the AI Power Assessment.

Mix of international and domestic capability (Choice/Resilience)

International capability available within jurisdiction (Access)

Domestic capability (Control)

Export Capability (Leverage)

AI POWER

ASSESSMENT

***Current* AI Power**
What competitive advantage a country currently has based on existing level of capability, agency over that capability, and how hard that capability is to come by globally.

Maturity
existence and level of current national capability based on AI Maturity Stocktake

Agency
over current national capability based on AI Agency Spectrum

Scarcity
of capability on a global level (i.e How many other countries have this capability?)

SCORE
Snapshot in time, based on assumptions in the Stocktake, Spectrum and Assessment being correct.

AI OPPORTUNITY

FORECAST

***Potential* AI Opportunity**
The relative difficulty and policy tracle offs associated with increasing the current AI Power in a particular capability area, as compared to other capabilities

Feasibility
of increasing national capability given current AI power

Desirability
of *increasing* maturity in this area, based on net +ve & -ve externalities and trade-offs (a normative assessment, in this case completed by TPDi)

SCORE
The combination of the Feasibility and Desirability of increasing AI Power in a particular area

Category I	Category II		Definitions	«Examples *Not Exhaustive, Illustrative Only*»	Indicators	**Dark Grey** - Not Enough Data **Shades of Pink** (light to dark) Noize - no identifiable capability Emerging - early signs of progress towards some capability Established - capability exists (quality variable) Advanced - high quality capability exists and is widely available	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)	Australia's data capabilities are used by other countries (full weight)	***Weighting*** **None** (0) **Emerging** (2) **Established** (4) **Advanced** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** 0 on Spectrum = **No Agency** (0) Up to one third of boxes on Spectrum = **Low Agency** (2) Half of boxes on Spectrum = **Medium Agency** (4) More than two thirds of boxes on Spectrum = **High Agency** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** **Most Countries** (0) **Many Countries** (1) **Few Countries** (2) **Very Few Countries** (3)	***Weighting*** **V low power** = 0-4 **Low power** = 5-8 **Some power** = 9-12 **High power** = 13-15	***Weighting*** **Not Feasible** (0) **Feasible w big effort** (1) **Feasible w some effort** (2) **Readily Achievable** (3)	***Weighting*** High Net -ve Externalities (0) Low Net -ve Externalities (1) Low Net +ve Externalities (2) High Net +ve Externalities (3)	***Weighting*** No Opportunity (0) Low Opportunity (2) Some Opportunity (4) High Opportunity (6)
2.3 Data Lifecycle Management	**2.3.1 Data Creation & Sourcing**	**2.3.1.1 Standards & Provenance**	Development and enforcement 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).	% 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	Established	N/A	N/A	☑	☑	☑	☐	Established (2)	High Agency (6)	Very Few Countries (3)	Some Power (11)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
		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. OECD 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 principles in agency data policies Presence of ICIP clauses or First Nations data agreements in major data programs	Emerging	☐	☐	☑	☑	☑	☐	Emerging (1)	Medium Agency (4)	Very Few Countries (3)	Low Power (8)	Feasible w Big Effort (1)	High Net +ve Externalities (3)	Some Opportunity (4)
	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.	The Australian Government Recordkeeping Metadata Standard (AGRS); The Digital Transformation Agency Data Maturity Model; ABS Census and Survey Validation Frameworks.	% 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	Emerging	☐	☑	☑	☑	☑	☐	Emerging (1)	High Agency (6)	Very Few Countries (3)	Some Power (10)	Feasible w Big Effort (1)	High Net +ve Externalities (3)	Some Opportunity (4)
		2.3.2.2 Annotation & Curation (for reusability)	Structured platforms and approaches to labelling, documentation, and maintenance of datasets to make them transparent, reusable, and suitable for AI training and analytics, aligned with FAIR and CARE principles (e.g. data catalogues)	Trove (National Library of Australia; Geoscience Australia metadata services; Research Data Australia (RDA).	Volume of datasets with persistent identifiers (DOIs) in Research Data Australia % of datasets with machine-readable metadata (FAIR compliance)	Emerging	☑	☑	☑	☑	☑	☐	Emerging (1)	High Agency (6)	Very Few Countries (3)	Some Power (10)	Feasible w Big Effort (1)	High Net +ve Externalities (3)	Some Opportunity (4)
	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.	Consumer Data Right (CDR); My Health Record; Security of Critical Infrastructure Act 2018 (amended 2021).	Number of accredited CDR data holders and participants Proportion of health and critical datasets hosted in ASD-certified clouds Existence o Government agency-level onshore data hosting policies	Emerging	N/A	N/A	N/A	N/A	☑	☐	Emerging (1)	High Agency (6)	Very Few Countries (3)	Some Power (10)	Feasible w Big Effort (1)	High Net +ve Externalities (3)	Some Opportunity (4)
		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.	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.Australian Research Data Commons' Research Data Australia (RDA); Personal Level Integrated Data Asset (PLIDA)	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	Established	N/A	N/A	N/A	☑	☑	☐	Established (2)	High Agency (6)	Very Few Countries (3)	Some Power (11)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
		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.	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.au	Partipation rates in licensing and compensation frameworks % of datasets under open vs restricted licences Volume of AI training datasets with explicit reuse permissions	Emerging	N/A	N/A	N/A	N/A	☑	☐	Emerging (1)	High Agency (6)	Very Few Countries (3)	Some Power (10)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)

LAYER 2: DATA ASSETS & LIFECYCLE MANAGEMENT

Layer 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.						Layer 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						**AI MATURITY**	**AI AGENCY**						**AI POWER**				**AI OPPORTUNITY**		
TYPOLOGY						**STOCKTAKE**	**SPECTRUM**						**ASSESSMENT**				**FORECAST**		
Common language to describe and measure different types of national AI capability						**Snapshot of Available Assessments**	**The Access, Control, Choice or Leverage of a National 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 score in the AI Power Assessment.**						***Current* AI Power** What competitive advantage a country currently has based on existing level of capability, agency over that capability, and how hard that capability is to come by globally.				***Potential* AI Opportunity** The relative difficulty and policy trade offs associated with increasing the current AI Power in a particular capability area, as compared to other capabilities		
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. 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 and 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.						**Identified through roundtable consultations, survey responses, and peer review.**	**Mix of international and domestic capability** (Choice/Resilience)				**Export Capability** (Leverage)	**Maturity**	**Agency**	**Scarcity**	**SCORE**	**Feasibility**	**Desirability**	**SCORE**
							International capability available within jurisdiction (Access)		**Domestic capability** (Control)				existence and level of current national capability based on AI Maturity Stocktake	over current national capability based on AI Agency Spectrum	of capability on a global level (i.e. How many other countries have this capability?)	Snapshot in time, based on assumptions in the Stocktake, Spectrum and Assessment being correct.	of increasing national capability given current AI power	of *increasing* maturity in this area, based on net +ve & -ve externalities and trade-offs (a normative assessment, in this case completed by TPDi)	The combination of the Feasibility and Desirability of increasing AI Power in a particular area
Category I	**Category II**		**Definitions**	**«Examples** *Not Exhaustive, Illustrative Only»*	**Indicators**	**Dark Grey** - Not Enough Data **Shades of Pink** (light to dark) None - no identifiable capability Emerging - early signs of progress towards some capability Established - capability exists (quality variable) Advanced - high quality capability exists and is widely available	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)	Australia's data capabilities are used by other countries (full weight)	***Weighting*** **None** (0) **Emerging** (2) **Established** (4) **Advanced** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** 0 on Spectrum = **No Agency** (0) Up to one third of boxes on Spectrum = **Low Agency** (2) Half of boxes on Spectrum = **Medium Agency** (4) More than two thirds of boxes on Spectrum = **High Agency** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** **Most Countries** (0) **Many Countries** (1) **Few Countries** (2) **Very Few Countries** (3)	***Weighting*** **V low power** = 0-4 **Low power** = 5-8 **Some power** = 9-12 **High power** = 13-15	***Weighting*** **Not Feasible** (0) **Feasible w big effort** (1) **Feasible w some effort** (2) **Readily Achievable** (3)	***Weighting*** High Net -ve Externalities (0) Low Net -ve Externalities (1) Low Net +ve Externalities (2) High Net +ve Externalities (3)	***Weighting*** No Opportunity (0) Low Opportunity (2) Some Opportunity (4) High Opportunity (6)
	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 Australian 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 (DEA) – 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 DEA standards Evidence of annual compliance audits of data flows against domestic frameworks	Established	N/A	N/A	N/A	N/A	☑	☑	Established (2)	High Agency (6)	Very Few Countries (3)	Some Power (11)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
2.3 Data Lifecycle Management	**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 (DOH 2025); National Archives of Australia – General Disposal Authorities (AFDA Express 2023)	% 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.	Emerging	☐	☑	☑	☑	☑	☐	Emerging (1)	High Agency (6)	Very Few Countries (3)	Some Power (10)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
		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.	Privacy Act 1988 (Cth), APP 11; the ASD Information Security Manual (ISM) (aligned with NIST 800-88); the Digital Continuity 2020 Policy (National Archives); AWS/Azure Sovereign Cloud deletion certification reports.	% 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. ASD, NAA, or OAIC-endorsed certification).	Emerging	☐	☑	☑	☑	☑	☐	Emerging (1)	High Agency (6)	Very Few Countries (3)	Some Power (10)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)

Layer 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

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	Definitions	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.	# of domestically developed models # of paper 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 (UNSW, CSIRO); Domestic LLMs with AU English support such as Indigenous/heritage language models.	
	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.	Fine-tuning a general-purpose vision model on Australian legal, medical, or environmental data to tailor outputs to local conditions.	# of models fine-tuned domestically to specialise in priority sectors Performance uplift vs base model
		3.1.2.2 Cultural and 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).	# of culturally aligned models released domestically Inclusion of Australian English and First Nations languages data with community consent

Layer 3: Models & Applications: The development and adaptation of models from computer vision to optimisation, and the applications that build on top of them.

	AI MATURITY	AI AGENCY						AI POWER				AI OPPORTUNITY		
	STOCKTAKE	SPECTRUM						ASSESSMENT				FORECAST		
	Snapshot of Available Assessments	The Access, Control, Choice or Leverage of a National 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 score in the AI Power Assessment.						***Current* AI Power** What competitive advantage a country currently has based on existing level of capability, agency over that capability, and how hard that capability is to come by globally.				***Potential* AI Opportunity** The relative difficulty and policy trade offs associated with increasing the current AI Power in a particular capability area, as compared to other capabilities		
	Identified through roundtable consultations, survey responses, and peer review.	**Mix of international and domestic capability** (Choice/Resilience)					**Export Capability** (Leverage)	**Maturity**	**Agency**	**Scarcity**	**SCORE**	**Feasibility**	**Desirability**	**SCORE**
		International capability (Access)		**Domestic capability** (Control)				existence and level of current national capability based on AI Maturity Stocktake	over current national capability based on AI Agency Spectrum	of capability on a global level (i.e How many other countries have this capability?)	Snapshot in time, based on assumptions in the Stocktake, Spectrum and Assessment being correct.	of increasing national capability given current AI power	of *increasing* maturity in this area, based on net +ve & -ve externalities and trade-offs (a normative assessment, in this case completed by TPDi)	The combination of the Feasibility and Desirability of increasing AI Power in a particular area
Category III	**Dark Grey** - Not Enough Data **Shades of Pink** (light to dark) None - no identifiable capability Emerging - early signs of progress towards some capability Established - capability exists (quality variable) Advanced - high quality capability exists and is widely available	Access to AI models or applications from countries subject to extrajudicial reach (e.g. China) (half weighted)	Access to AI models or applications 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)	AI models or applications developed in Australia that are used by other countries (full weight)	***Weighting*** **None** (0) **Emerging** (2) **Established** (4) **Advanced** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** 0 on Spectrum = **No Agency** (0) Up to one third of boxes on Spectrum = **Low Agency** (2) Half of boxes on Spectrum = **Medium Agency** (4) More than two thirds of boxes on Spectrum = **High Agency** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** **Most Countries** (0) **Many Countries** (1) **Few Countries** (2) **Very Few Countries** (3)	***Weighting*** **V low power** = 0-4 **Low power** = 5-8 **Some power** = 9-12 **High power** = 13-15	***Weighting*** **Not Feasible** (0) **Feasible w big effort** (1) **Feasible w some effort** (2) **Readily Achievable** (3)	***Weighting*** High Net -ve Externalities (0) Low Net -ve Externalities (1) Low Net +ve Externalities (2) High Net +ve Externalities (3)	***Weighting*** No Opportunity (0) Low Opportunity (2) Some Opportunity (4) High Opportunity (6)
3.1.1.1 Computer Vision	Advanced	☐	☑	☑	☑	☐	☑	Advanced (6)	Medium Agency (4)	Few Countries (2)	Some Power (12)	Feasible w Big Effort (1)	Low Net +ve Externalities (2)	Some Opportunity (3)
3.1.1.2 Computer Audition	Emerging	☐	☑	☑	☑	☐	☐	Emerging (2)	Medium Agency (4)	Few Countries (2)	Low Power (8)	Feasible w Big Effort (1)	Low Net +ve Externalities (2)	Some Opportunity (3)
3.1.1.3 Computer Linguistics	Established	☐	☑	☑	☐	☐	☐	Established (4)	Low Agency (2)	Few Countries (2)	Low Power (8)	Feasible w Big Effort (1)	Low Net +ve Externalities (2)	Some Opportunity (3)
3.1.1.4 Robotics & Physical AI	Established	☐	☑	☑	☑	☐	☑	Established (4)	Medium Agency (4)	Few Countries (2)	Some Power (10)	Feasible w Big Effort (1)	Low Net +ve Externalities (2)	Some Opportunity (3)
3.1.1.5 Forecasting	Established	☐	☑	☑	☑	☑	☐	Established (4)	Medium Agency (4)	Few Countries (2)	Some Power (10)	Feasible w Big Effort (1)	Low Net +ve Externalities (2)	Some Opportunity (3)
3.1.1.6 Discovery	Emerging	☐	☑	☑	☑	☐	☐	Emerging (2)	Medium Agency (4)	Few Countries (2)	Low Power (8)	Feasible w Big Effort (1)	Low Net +ve Externalities (2)	Some Opportunity (3)
3.1.1.7 Planning / Optimisation	Emerging	☐	☑	☑	☐	☐	☐	Emerging (2)	Low Agency (2)	Few Countries (2)	Low Power (6)	Feasible w Big Effort (1)	Low Net +ve Externalities (2)	Some Opportunity (3)
3.1.1.8 Creation / Generative	Emerging	☑	☑	☑	☑	☐	☐	Emerging (2)	Medium Agency (4)	Few Countries (2)	Low Power (8)	Feasible w Big Effort (1)	Low Net +ve Externalities (2)	Some Opportunity (3)
3.1.1.9 Culturally & Nationally Inclusive Models	Emerging	☐	☑	☑	☑	☐	☐	Emerging (2)	Medium Agency (4)	Few Countries (2)	Low Power (8)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
3.1.2.1 Domain Adaptation	Established	☐	☑	☑	☑	☑	☐	Established (4)	Medium Agency (4)	Many Countries (1)	Some Power (9)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
3.1.2.2 Cultural and Linguistic Alignment	Emerging	☐	☑	☑	☑	☑	☐	Emerging (2)	Medium Agency (4)	Many Countries (1)	Low Power (7)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)

Layer 3: Models & Applications: The development and adaptation of models from computer vision to optimisation, and the applications that build on top of them.						Layer 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						**AI MATURITY**	**AI AGENCY**					**AI POWER**				**AI OPPORTUNITY**			
TYPOLOGY						**STOCKTAKE**	**SPECTRUM**					**ASSESSMENT**				**FORECAST**			
Common language to describe and measure different types of national AI capability						**Snapshot of Available Assessments**	**The Access, Control, Choice or Leverage of a National 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 score in the AI Power Assessment.**					***Current* AI Power** What competitive advantage a country currently has based on existing level of capability, agency over that capability, and how hard that capability is to come by globally.				***Potential* AI Opportunity** The relative difficulty and policy trade offs associated with increasing the current AI Power in a particular capability area, as compared to other capabilities		
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.						**Identified through roundtable consultations, survey responses, and peer review.**	**Mix of international and domestic capability** (Choice/Resilience)				**Export Capability** (Leverage)	**Maturity**	**Agency**	**Scarcity**	**SCORE**	**Feasibility**	**Desirability**	**SCORE**
							International capability (Access)		**Domestic capability** (Control)			existence and level of current national capability based on AI Maturity Stocktake	over current national capability based on AI Agency Spectrum	of capability on a global level (i.e How many other countries have this capability?)	Snapshot in time, based on assumptions in the Stocktake, Spectrum and Assessment being correct.	of increasing national capability given current AI power	of *increasing* maturity in this area, based on net +ve & -ve externalities and trade-offs (a normative assessment, in this case completed by TPDi)	The combination of the Feasibility and Desirability of increasing AI Power in a particular area
Category I	**Category II**	**Category III**	**Definitions**	**Examples** *Not Exhaustive, Illustrative Only*	**Indicators**	**Dark Grey** - Not Enough Data **Shades of Pink** (light to dark) None - no identifiable capability Emerging - early signs of progress towards some capability Established - capability exists (quality variable) Advanced - high quality capability exists and is widely available	Access to AI models or applications from countries subject to extrajudicial reach (e.g. China) (half weighted)	Access to AI models or applications 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)	AI models or applications developed in Australia that are used by other countries (full weight)	***Weighting*** **None** (0) **Emerging** (2) **Established** (4) **Advanced** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** 0 on Spectrum = **No Agency** (0) Up to one third of boxes on Spectrum = **Low Agency** (2) Half of boxes on Spectrum = **Medium Agency** (4) More than two thirds of boxes on Spectrum = **High Agency** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** **Most Countries** (0) **Many Countries** (1) **Few Countries** (2) **Very Few Countries** (3)	***Weighting*** **V low power** = 0-4 **Low power** = 5-8 **Some power** = 9-12 **High power** = 13-15	***Weighting*** **Not Feasible** (0) **Feasible w big effort** (1) **Feasible w some effort** (2) **Readily Achievable** (3)	***Weighting*** High Net -ve Externalities (0) Low Net -ve Externalities (1) Low Net +ve Externalities (2) High Net +ve Externalities (3)	***Weighting*** No Opportunity (0) Low Opportunity (2) Some Opportunity (4) High Opportunity (6)
	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	Emerging	☐	☑	☑	☑	☐	☑	Emerging (2)	Medium Agency (4)	Few Countries (2)	Low Power (8)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
	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	Emerging	☐	☑	☑	☑	☐	☑	Emerging (2)	Medium Agency (4)	Few Countries (2)	Low Power (8)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
	3.1.5 Safety and 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 for example 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.	# of domestic models incorporating ethical or safety tuning Existence of transparency and audit frameworks Public red-teaming or risk reports	Not Enough Data	☐	☑	☑	☑	☑	☐	Not Enough Data (0)	Medium Agency (4)	Many Countries (1)	Low Power (5)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
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)	"# of general purpose AI applications developed domestically Exported general purpose AI applications	Advanced	☑	☑	☑	☑	☐	☑	Advanced (6)	Medium Agency (4)	Many Countries (1)	Some Power (11)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
	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);	# of sector specific AI applications developed domestically Exported sector-specific AI applications	Established	☑	☑	☑	☑	☐	☐	Established (4)	Medium Agency (4)	Many Countries (1)	Some Power (9)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)

Layer 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						AI MATURITY	AI AGENCY				AI POWER				AI OPPORTUNITY		
TYPOLOGY						STOCKTAKE	SPECTRUM				ASSESSMENT				FORECAST		
Common language to describe and measure different types of national AI capability						Snapshot of Available Assessments	The Access, Control, Choice or Leverage of a National 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 score in the AI Power Assessment.				*Current* AI Power What competitive advantage a country currently has based on existing level of capability, agency over that capability, and how hard that capability is to come by globally.				*Potential* AI Opportunity The relative difficulty and policy trade offs associated with increasing the current AI Power in a particular capability area, as compared to other capabilities		
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.						Identified through roundtable consultations, survey responses, and peer review.	Mix of international and domestic capability (Choice/Resilience)			Export Capability (Leverage)	Maturity	Agency	Scarcity	SCORE	Feasibility	Desirability	SCORE
							International capability (Access)	Domestic capability (Control)			existence and level of current national capability based on AI Maturity Stocktake	over current national capability based on AI Agency Spectrum	of capability on a global level (i.e How many other countries have this capability?)	Snapshot in time, based on assumptions in the Stocktake, Spectrum and Assessment being correct.	of increasing national capability given current AI power	of *increasing* maturity in this area, based on net +ve & -ve externalities and trade-offs (a normative assessment, in this case completed by TPDi)	The combination of the Feasibility and Desirability of increasing AI Power in a particular area
Category I	**Category II**	**Category III**	**Definitions**	**Examples** *Not Exhaustive, Illustrative Only*	**Indicators**	**Dark Grey** - Not Enough Data **Shades of Pink** (light to dark) None - no identifiable capability Emerging - early signs of progress towards some capability Established - capability exists (quality variable) Advanced - high quality capability exists and is widely available	Adoption of AI systems made available by international partners occuring in Australia (half weight)	Adoption of products/ services from Australian Business (full weight)	Adoption of products/ services from Aus government (full weight)	Access to the Australian market is important to other countries (full weight)	***Weighting*** **None** (0) **Emerging** (2) **Established** (4) **Advanced** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** 0 on Spectrum = **No Agency** (0) Up to one third of boxes on Spectrum = **Low Agency** (2) Half of boxes on Spectrum = **Medium Agency** (4) More than two thirds of boxes on Spectrum = **High Agency** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** **Most Countries** (0) **Many Countries** (1) **Few Countries** (2) **Very Few Countries** (3)	***Weighting*** **V low power** = 0-4 **Low power** = 5-8 **Some power** = 9-12 **High power** = 13-15	***Weighting*** **Not Feasible** (0) **Feasible w big effort** (1) **Feasible w some effort** (2) **Readily Achievable** (3)	***Weighting*** High Net -ve Externalities (0) Low Net -ve Externalities (1) Low Net +ve Externalities (2) High Net +ve Externalities (3)	***Weighting*** No Opportunity (0) Low Opportunity (2) Some Opportunity (4) High Opportunity (6)
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).	$ invested in AI (by stage) # of AI-related deals Share of public vs private funding Volume of government grants FDI into domestic AI firms	Emerging	✓	✓	✓	N/A	Emerging (2)	High Agency (6)	Many Countries (1)	Some Power (9)	Feasible w Big Effort (1)	High Net +ve Externalities (3)	Some Opportunity (4)
	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).	# of AI companies (e.g. Dealroom, paid)	Emerging	✓	✓	✓	✓	Emerging (2)	High Agency (6)	Many Countries (1)	Some Power (9)	Feasible w Big Effort (1)	High Net +ve Externalities (3)	Some Opportunity (4)
4.2 Rate of Adoption	**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 % of enterprises using AI technologies (Eurostat) AI recruitment	Established	✓	✓	N/A	✓	Established (4)	High Agency (6)	Few Countries (2)	Some Power (12)	Feasible w Some Effort (2)	Low Net +ve Externalities (2)	Some Opportunity (4)
		4.2.1.2 SMEs & Startups	The extent to which small and medium enterprises (SMEs) 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 % of enterprises using AI technologies (Eurostat) AI recruitment	Established	✓	✓	N/A	✓	Established (4)	High Agency (6)	Few Countries (2)	Some Power (12)	Feasible w Some Effort (2)	Low Net +ve Externalities (2)	Some Opportunity (4)
	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.	% of agencies with AI adoption plans, Innovative use of AI in government, $ funding for AI integration	Emerging	✓	✓	✓	✓	Emerging (2)	High Agency (6)	Few Countries (2)	Some Power (10)	Feasible w Big Effort (1)	Low Net +ve Externalities (2)	Some Opportunity (3)
		4.2.2.2 Defence & National Security	National Intelligence community and Department of Defence (including the Defence Force)'s adoption and integration of AI cross 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. Taingiwilta); 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	✓	✓	✓	✓	Established (4)	High Agency (6)	Few Countries (2)	Some Power (12)	Feasible w Some Effort (2)	Low Net +ve Externalities (2)	Some Opportunity (4)
	4.2.3 Public Interest Adoption	**4.2.3.1 Civil Society Adoption**	The extent to which non-profits and community organisations adopt AI to conduct their activities.	Adoption of AI products and services by civil society organisation, including investments, projects or services to increase access (including funding, datasets etc).	Statistics on AI adoption in the not for profit sector	Emerging	✓	✓	✓	✓	Emerging (2)	High Agency (6)	Few Countries (2)	Some Power (10)	Feasible w Some Effort (2)	Low Net +ve Externalities (2)	Some Opportunity (4)
		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).	# of programs/initiatives and $ in funding to increase access for these groups	Established	✓	✓	✓	✓	Established (4)	High Agency (6)	Few Countries (2)	Some Power (12)	Few Countries (2)	Low Net +ve Externalities (2)	Some Opportunity (4)
	4.2.4 Inclusive AI Adoption		Extent to which individuals have access to, and 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	✓	✓	✓	N/A	Emerging (2)	High Agency (6)	Few Countries (2)	Some Power (10)	Few Countries (2)	Low Net +ve Externalities (2)	Some Opportunity (4)

Layer 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.						Layer 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						**AI MATURITY**	**AI AGENCY**					**AI POWER**				**AI OPPORTUNITY**		
TYPOLOGY						**STOCKTAKE**	**SPECTRUM**					**ASSESSMENT**				**FORECAST**		
Common language to describe and measure different types of national AI capability						**Snapshot of Available Assessments**	**The Access, Control, Choice or Leverage of a National 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 score in the AI Power Assessment.**					***Current* AI Power** What competitive advantage a country currently has based on existing level of capability, agency over that capability, and how hard that capability is to come by globally.				***Potential* AI Opportunity** The relative difficulty and policy trade offs associated with increasing the current AI Power in a particular capability area, as compared to other capabilities		
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.						**Identified through roundtable consultations, survey responses, and peer review.**	**Mix of international and domestic capability** (Choice/Resilience)			**Export Capability** (Leverage)	**Maturity**	**Agency**	**Scarcity**	**SCORE**	**Feasibility**	**Desirability**	**SCORE**
							International capability (Access)	**Domestic capability** (Control)			existence and level of current national capability based on AI Maturity Stocktake	over current national capability based on AI Agency Spectrum	of capability on a global level (i.e How many other countries have this capability?)	Snapshot in time, based on assumptions in the Stocktake, Spectrum and Assessment being correct.	of increasing national capability given current AI power	of *increasing* maturity in this area, based on net +ve & -ve externalities and trade-offs (a normative assessment, in this case completed by TPDi)	The combination of the Feasibility and Desirability of increasing AI Power in a particular area
Category I	**Category II**	**Category III**	**Definitions**	**Examples** *Not Exhaustive, Illustrative Only*	**Indicators**	**Dark Grey** - Not Enough Data **Shades of Pink** (light to dark) None - no identifiable capability Emerging - early signs of progress towards some capability Established - capability exists (quality variable) Advanced - high quality capability exists and is widely available	Adoption of AI systems made available by international partners occuring in Australia (half weight)	Adoption of products/ services from Australian Business (full weight)	Adoption of products/ services from Aus government (full weight)	Access to the Australian market is important to other countries (full weight)	***Weighting*** **None** (0) **Emerging** (2) **Established** (4) **Advanced** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** 0 on Spectrum = **No Agency** (0) Up to one third of boxes on Spectrum = **Low Agency** (2) Half of boxes on Spectrum = **Medium Agency** (4) More than two thirds of boxes on Spectrum = **High Agency** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** **Most Countries** (0) **Many Countries** (1) **Few Countries** (2) **Very Few Countries** (3)	***Weighting*** **V low power** = 0-4 **Low power** = 5-8 **Some power** = 9-12 **High power** = 13-15	***Weighting*** **Not Feasible** (0) **Feasible w big effort** (1) **Feasible w some effort** (2) **Readily Achievable** (3)	***Weighting*** High Net -ve Externalities (0) Low Net -ve Externalities (1) Low Net +ve Externalities (2) High Net +ve Externalities (3)	***Weighting*** No Opportunity (0) Low Opportunity (2) Some Opportunity (4) High Opportunity (6)
4.3 Culture of Adoption *See also Social Licence in the Layer 6: Governance*	**4.3.1 Discerning Adoption**		Extent to which individuals and organisations approach and 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 ppl choosing to exercise a right not to adopt AI Survey statistics on attitudes towards AI Evidence of workforce engagement programs	Established	✓	✓	✓	N/A	Established (4)	High Agency (6)	Few Countries (2)	Some Power (12)	Few Countries (2)	High Net +ve Externalities (3)	High Opportunity (5)
	4.3.2 Trust in AI Deployment *(See also 6.2.2 Ethics, Standards & Assurance Frameworks)*	**4.3.2.1 Trust in Public Sector**	Public confidence in government's use and governance of AI — based on it being transparent, fit for purpose, safe and easy to use, convenient and accessible.	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	✓	✓	N/A	N/A	Emerging (2)	High Agency (6)	Few Countries (2)	Some Power (10)	Few Countries (2)	High Net +ve Externalities (3)	High Opportunity (5)
		4.3.2.2 Trust in Private Sector	Public and consumer confidence in private-sector use of AI, based on it being transparent, fit for purpose, safe and easy to use, convenient and accessible.	Singapore AI verify; NAIC benchmark; MIT AI Incident Tracker.	% people expressing confidence in ability of businesses to use AI responsibly (e.g. Ipsos) # companies participating in certification programs, standards or voluntary codes Existence of AI incident reporting	Emerging	✓	✓	N/A	N/A	Emerging (2)	High Agency (6)	Few Countries (2)	Some Power (10)	Few Countries (2)	High Net +ve Externalities (3)	High Opportunity (5)
		4.3.2.3 Trust in Public Interest Sector	Public confidence in academic, not-for-profit, and media institutions use of AI, based on it being transparent, fit for purpose, safe and easy to use, convenient and accessible.	ARC Centre of Excellence for Automated Decision-Making and Society (ADM+S); AICD AI Governance Checklist for SME and NFP Directors	# AI focused academic or civil society institutions # of independent AI audits, investigations, reports from NGOs, academia or media Public trust perception surveys	Emerging	✓	✓	N/A	N/A	Emerging (2)	High Agency (6)	Few Countries (2)	Some Power (10)	Few Countries (2)	High Net +ve Externalities (3)	High Opportunity (5)

Layer 5: Skills: The skills required for all elements of the AI ecosystem, from building and developing, to governing and living with AI.																				
AI CAPABILITY						**AI MATURITY**	**AI AGENCY**			**AI POWER**				**AI OPPORTUNITY**		
TYPOLOGY						**STOCKTAKE**	**SPECTRUM**			**ASSESSMENT**				**FORECAST**		
Common language to describe and measure different types of national AI capability						**Snapshot of Available Assessments**	**The Access, Control, Choice or Leverage of a National 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 score in the AI Power Assessment.**			***Current* AI Power** What competitive advantage a country currently has based on existing level of capability, agency over that capability, and how hard that capability is to come by globally.				***Potential* AI Opportunity** The relative difficulty and policy trade offs associated with increasing the current AI Power in a particular capability area, as compared to other capabilities		
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.						**Identified through roundtable consultations, survey responses, and peer review.**	**Mix of international and domestic capability** (Choice/Resilience)		**Export Capability** (Leverage)	**Maturity**	**Agency**	**Scarcity**	**SCORE**	**Feasibility**	**Desirability**	**SCORE**
							International capability (Access)	**Domestic capability** (Control)		existence and level of current national capability based on AI Maturity Stocktake	over current national capability based on AI Agency Spectrum	of capability on a global level (i.e How many other countries have this capability?)	Snapshot in time, based on assumptions in the Stocktake, Spectrum and Assessment being correct.	of increasing national capability given current AI power	of *increasing* maturity in this area, based on net +ve & -ve externalities and trade-offs (a normative assessment, in this case completed by TPDi)	The combination of the Feasibility and Desirability of increasing AI Power in a particular area
Category I	**Category II**	**Definitions**	**Examples** *Not Exhaustive, Illustrative Only*	**Indicators**		**Dark Grey** - Not Enough Data **Shades of Pink** (light to dark) None - no identifiable capability Emerging - early signs of progress towards some capability Established - capability exists (quality variable) Advanced - high quality capability exists and is widely available	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)	***Weighting*** **None** (0) **Emerging** (2) **Established** (4) **Advanced** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** 0 on Spectrum = **No Agency** (0) Up to one third of boxes on Spectrum = **Low Agency** (2) Half of boxes on Spectrum = **Medium Agency** (4) More than two thirds of boxes on Spectrum = **High Agency** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** **Most Countries** (0) **Many Countries** (1) **Few Countries** (2) **Very Few Countries** (3)	***Weighting*** **V low power** = 0-4 **Low power** = 5-8 **Some power** = 9-12 **High power** = 13-15	***Weighting*** **Not Feasible** (0) **Feasible w big effort** (1) **Feasible w some effort** (2) **Readily Achievable** (3)	***Weighting*** High Net -ve Externalities (0) Low Net -ve Externalities (1) Low Net +ve Externalities (2) High Net +ve Externalities (3)	***Weighting*** No Opportunity (0) Low Opportunity (2) Some Opportunity (4) High Opportunity (6)
5.1 Skills for building AI infrastructure and developing AI	**5.1.1 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).	# of datacentre technicians trained domestically; share of datacentre build or operations contracts using domestic labour/training pipelines	Existence and scale of domestic (acredited) training capacity Skills & Cirriculla mapped to 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	Advanced	☐	☑	☑	Advanced (6)	Medium Agency (4)	Many Countries (1)	Some Power (11)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
	5.1.2 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.	Semiconductor Sector Service Bureau (S3B) 'Building a sustainable talent pool' initiative; ANU School of Engineering.	# of engineers trained in semiconductor, systems or accelerator hardware disciplines		Emerging	☑	☑	☐	Emerging (2)	Medium Agency (4)	Few Countries (2)	Low Power (8)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
	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).	# of AI PhDs, publication impact, compute access.		Established	☑	☑	☑	Established (4)	High Agency (6)	Few Countries (2)	Some Power (12)	Feasible w Big Effort (1)	High Net +ve Externalities (3)	Some Opportunity (4)
	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 ML lifecycle from design to deployment; Machine Learning Operations (MLOps): Focuses on deploying, monitoring, and maintaining AI systems.	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.		Emerging	☑	☑	☐	Emerging (2)	Medium Agency (4)	Very Few Countries (3)	Some Power (9)	Feasible w Big Effort (1)	High Net +ve Externalities (3)	Some Opportunity (4)
	5.1.5 Research and 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, ethics, and scaling technology through Technology Readiness Levels. Innovation and commercialisation.	AIML's Industry Solutions Program (TRL 5–8); CSIRO's Responsible AI Research Centre (RAI Research Centre) (CSIRO's Responsible Innovation Future Science Platform).	# of industry-funded AI translation projects or CRC programs % of public R&D expenditure on AI commercialisation pathways TRL progression rate of AI prototypes to deployment in Australia		Emerging	☑	☑	☑	Emerging (2)	High Agency (6)	Very Few Countries (3)	Some Power (11)	Feasible w Big Effort (1)	High Net +ve Externalities (3)	Some Opportunity (4)
	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–UK Research Mobility Initiatives (CSIRO–UKRI); OECD AI Working Groups; Inbound and Outbound Fellowships.	% of AI publications with international co-authorship where Australia is lead or equal partner; Ratio of inbound to outbound AI research fellows, # of AU experts serving on ISO/OECD AI standards committees		Emerging	☑	☐	☑	Emerging (2)	Medium Agency (4)	Few Countries (2)	Low Power (8)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)

Layer 5: Skills: The skills required for all elements of the AI ecosystem, from building and developing, to governing and living with AI.					Layer 5: Skills: The skills required for all elements of the AI ecosystem, from building and developing, to governing and living with AI.									
AI CAPABILITY					**AI MATURITY**	**AI AGENCY**			**AI POWER**				**AI OPPORTUNITY**		
TYPOLOGY					**STOCKTAKE**	**SPECTRUM**			**ASSESSMENT**				**FORECAST**		
Common language to describe and measure different types of national AI capability					**Snapshot of Available Assessments**	**The Access, Control, Choice or Leverage of a National 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 score in the AI Power Assessment.**			***Current* AI Power** What competitive advantage a country currently has based on existing level of capability, agency over that capability, and how hard that capability is to come by globally.				***Potential* AI Opportunity** The relative difficulty and policy trade offs associated with increasing the current AI Power in a particular capability area, as compared to other capabilities		
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.					**Identified through roundtable consultations, survey responses, and peer review.**	**Mix of international and domestic capability** (Choice/Resilience)		**Export Capability** (Leverage)	**Maturity**	**Agency**	**Scarcity**	**SCORE**	**Feasibility**	**Desirability**	**SCORE**
						International capability (Access)	**Domestic capability** (Control)		existence and level of current national capability based on AI Maturity Stocktake	over current national capability based on AI Agency Spectrum	of capability on a global level (i.e How many other countries have this capability?)	Snapshot in time, based on assumptions in the Stocktake, Spectrum and Assessment being correct.	of increasing national capability given current AI power	of *increasing* maturity in this area, based on net +ve & -ve externalities and trade-offs (a normative assessment, in this case completed by TPDi)	The combination of the Feasibility and Desirability of increasing AI Power in a particular area
Category I	**Category II**	**Definitions**	**Examples** *Not Exhaustive, Illustrative Only*	**Indicators**	**Dark Grey** - Not Enough Data **Shades of Pink** (light to dark) None - no identifiable capability Emerging - early signs of progress towards some capability Established - capability exists (quality variable) Advanced - high quality capability exists and is widely available	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)	***Weighting*** **None** (0) **Emerging** (2) **Established** (4) **Advanced** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** 0 on Spectrum = **No Agency** (0) Up to one third of boxes on Spectrum = **Low Agency** (2) Half of boxes on Spectrum = **Medium Agency** (4) More than two thirds of boxes on Spectrum = **High Agency** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** **Most Countries** (0) **Many Countries** (1) **Few Countries** (2) **Very Few Countries** (3)	***Weighting*** **V low power** = 0-4 **Low power** = 5-8 **Some power** = 9-12 **High power** = 13-15	***Weighting*** **Not Feasible** (0) **Feasible w big effort** (1) **Feasible w some effort** (2) **Readily Achievable** (3)	***Weighting*** High Net -ve Externalities (0) Low Net -ve Externalities (1) Low Net +ve Externalities (2) High Net +ve Externalities (3)	***Weighting*** No Opportunity (0) Low Opportunity (2) Some Opportunity (4) High Opportunity (6)
5.2 Skills for Deploying & Maintaining AI	**5.2.1 Business and Commercial Skills**	Commercial and operational capabilities 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).	% of SMEs reporting AI adoption or pilot projects (ABS Innovation Survey) # of firms completing national AI commercialisation programs (NAIC "Innovate to Grow") % of government AI procurements meeting assurance and vendor-sovereignty criteria	Established	☑	☑	☑	Established (4)	High Agency (6)	Many Countries (1)	Some Power (11)	Feasible w Big Effort (1)	High Net +ve Externalities (3)	Some Opportunity (4)
	5.2.2 Interdisciplinary and Domain Expertise	The ability 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).	# of domain-specific AI microcredential completions (health, law, energy, finance) % of AI projects with domain co-design or ethics approval	Not Enough Data	☐	☑	☐	Not Enough Data (0)	Low Agency (2)	Few Countries (2)	Very Low Power (4)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
5.3 Skills for Governing & Securing AI	**5.3.1 Assurance and 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.	# of certified AI assurance or governance professionals (AIGP, ISO/IEC 42001 auditors) % of high-risk AI systems undergoing independent evaluation before deployment Average time to resolve safety/bias issues found in audits	Emerging	☑	☑	☐	Emerging (2)	Medium Agency (4)	Few Countries (2)	Low Power (8)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
	5.3.2 Cybersecurity and Technical Robustness	Capabilities 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.	ASD/ACSC AI Security Guidance; TAFEcyber National Consortium Programs.	% 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)	Established	☑	☑	☐	Established (4)	Medium Agency (4)	Few Countries (2)	Some Power (10)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
	5.3.3 Policy and Legal Skills	Expertise 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.	Australian Public Service Commission, Responsible AI in Government Training (2024); University of Melbourne Microcredential, Artificial Intelligence Policies (2023) Tech Policy Design Institute's AI, Emerging Tech & Policy Bootcamp (2025).	# of public-sector staff completing "Responsible AI in Government" training # of legislative or regulatory instruments referencing AI principles	Established	☑	☑	☑	Established (4)	High Agency (6)	Few Countries (2)	Some Power (12)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
5.4 Skills for Living with AI *See also adoption rate and adoption culture, Layer 4: Innovation & Adoption)*	**5.4.1 General Public AI Literacy and Engagement**	The national ability for people to understand and use AI safely and confidently. This includes basic digital and AI literacy, awareness of bias and privacy, and the intergenerational capacity to question, engage with and refuse AI in daily life (as appropriate).	"AI for Everyone" Microskills (NAIC and partners); CSIRO's Our Future World forums and ADM+S public trust research on AI in society.	% 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	Emerging	N/A	☑	N/A	Emerging (2)	High Agency (6)	Few Countries (2)	Some Power (10)	Feasible w Big Effort (1)	High Net +ve Externalities (3)	Some Opportunity (4)

Layer 6: Governance: Strategies, frameworks and policies across Government and the entire ecosystem that support national AI capability.					Layer 6: Governance: Strategies, frameworks and policies across Government and the entire ecosystem that support national AI capability.										
AI CAPABILITY					AI MATURITY	AI AGENCY			AI POWER				AI OPPORTUNITY		
TYPOLOGY					STOCKTAKE	SPECTRUM			ASSESSMENT				FORECAST		
Common language to describe and measure different types of national AI capability					Snapshot of Available Assessments	The Access, Control, Choice or Leverage of a National 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 score in the AI Power Assessment.			*Current* AI Power What competitive advantage a country currently has based on existing level of capability, agency over that capability, and how hard that capability is to come by globally.				*Potential* AI Opportunity The relative difficulty and policy trade offs associated with increasing the current AI Power in a particular capability area, as compared to other capabilities		
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.						Mix of international and domestic capability (Choice/Resilience)		Export Capability (Leverage)	Maturity	Agency	Scarcity	SCORE	Feasibility	Desirability	SCORE
						International capability (Access)	Domestic capability (Control)		existence and level of current national capability based on AI Maturity Stocktake	over current national capability based on AI Agency Spectrum	of capability on a global level (i.e How many other countries have this capability?)	Snapshot in time, based on assumptions in the Stocktake, Spectrum and Assessment being correct.	of increasing national capability given current AI power	of *increasing* maturity in this area, based on net +ve & -ve externalities and trade-offs (a normative assessment, in this case completed by TPDi)	The combination of the Feasibility and Desirability of increasing AI Power in a particular area
Category I	**Category II**	**Definitions**	**Examples** *Not Exhaustive, Illustrative Only*	**Indicators**	**Dark Grey** - Not Enough Data **Shades of Pink** (light to dark) None - no identifiable capability Emerging - early signs of progress towards some capability Established - capability exists (quality variable) Advanced - high quality capability exists and is widely available	Access to governance capability that originates from other country, or application of international governance framework that applies in jurisdiction through extraterritoriality (1)	Governance originating from domestic jurisdiction (2)	Other juridictions importing this jurisdiction's governance approaches (2)	***Weighting*** **None** (0) **Emerging** (2) **Established** (4) **Advanced** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** 0 on Spectrum = **No Agency** (0) Up to one third of boxes on Spectrum = **Low Agency** (2) Half of boxes on Spectrum = **Medium Agency** (4) More than two thirds of boxes on Spectrum = **High Agency** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** **Most Countries** (0) **Many Countries** (1) **Few Countries** (2) **Very Few Countries** (3)	***Weighting*** **V low power** = 0-4 **Low power** = 5-8 **Some power** = 9-12 **High power** = 13-15	***Weighting*** **Not Feasible** (0) **Feasible w big effort** (1) **Feasible w some effort** (2) **Readily Achievable** (3)	***Weighting*** High Net -ve Externalities (0) Low Net -ve Externalities (1) Low Net +ve Externalities (2) High Net +ve Externalities (3)	***Weighting*** No Opportunity (0) Low Opportunity (2) Some Opportunity (4) High Opportunity (6)
6.1 Government Strategy	**6.1.1 National AI Strategy and Leadership**	Existence and maturity of national AI strategy (vision, funding, implementation).	Singapore National AI strategy 2.0; UK AI Action Plan; UAE 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 investment in AI capability development funding, incl AI workforce transition plan	Emerging	N/A	☑	☐	Emerging (2)	Medium Agency (4)	Many Countries (1)	Low Power (7)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
	6.1.2 Policy Coherence	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; UK 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	N/A	☑	☐	Emerging (2)	Medium Agency (4)	Many Countries (1)	Low Power (7)	Readily Achievable (3)	High Net +ve Externalities (3)	High Opportunity (6)
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 and liability.	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	☑	☑	☐	Established (4)	Medium Agency (4)	Few Countries (2)	Some Power (10)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
	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; NIST AI Risk Management Framework; UK 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	☑	☑	☐	Established (4)	Medium Agency (4)	Many Countries (1)	Some power (9)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
	6.2.3 Regulatory and 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 + PDPC model framework; UK DRCF integration with AI Security Institute; ACCC Digital Platforms; ASIC RegTech Sandbox; OAIC; eSafety	# regulators with explicit AI mandate / strategy AI Safety Institute Cross regulator coordination mechanism % staff with AI expertise + investment in AI capability building # Regulators with dedicated AI technical units/advisory panels Availability of regulatory toolkits or guidance for AI # AI related investigations + reporting	Emerging	N/A	☑	☐	Emerging (2)	Medium Agency (4)	Few Countries (2)	Low Power (8)	Feasible w Big Effort (1)	High Net +ve Externalities (3)	Some Opportunity (4)

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AI CAPABILITY					**AI MATURITY**	**AI AGENCY**			**AI POWER**				**AI OPPORTUNITY**		
TYPOLOGY					**STOCKTAKE**	**SPECTRUM**			**ASSESSMENT**				**FORECAST**		
Common language to describe and measure different types of national AI capability					**Snapshot of Available Assessments**	**The Access, Control, Choice or Leverage of a National 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 score in the AI Power Assessment.**			***Current* AI Power** What competitive advantage a country currently has based on existing level of capability, agency over that capability, and how hard that capability is to come by globally.				***Potential* AI Opportunity** The relative difficulty and policy trade offs associated with increasing the current AI Power in a particular capability area, as compared to other capabilities		
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.						**Mix of international and domestic capability** (Choice/Resilience)		**Export Capability** (Leverage)	**Maturity**	**Agency**	**Scarcity**	**SCORE**	**Feasibility**	**Desirability**	**SCORE**
						International capability (Access)	**Domestic capability** (Control)		existence and level of current national capability based on AI Maturity Stocktake	over current national capability based on AI Agency Spectrum	of capability on a global level (i.e How many other countries have this capability?)	Snapshot in time, based on assumptions in the Stocktake, Spectrum and Assessment being correct.	of increasing national capability given current AI power	of *increasing* maturity in this area, based on net +ve & -ve externalities and trade-offs (a normative assessment, in this case completed by TPDi)	The combination of the Feasibility and Desirability of increasing AI Power in a particular area
Category I	**Category II**	**Definitions**	**Examples** *Not Exhaustive, Illustrative Only*	**Indicators**	**Dark Grey** - Not Enough Data **Shades of Pink** (light to dark) None - no identifiable capability Emerging - early signs of progress towards some capability Established - capability exists (quality variable) Advanced - high quality capability exists and is widely available	Access to governance capability that originates from other country, or application of international governance framework that applies in jurisdiction through extraterritoriality (1)	Governance originating from domestic jurisdiction (2)	Other juridictions importing this jurisdiction's governance approaches (2)	***Weighting*** **None** (0) **Emerging** (2) **Established** (4) **Advanced** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** 0 on Spectrum = **No Agency** (0) Up to one third of boxes on Spectrum = **Low Agency** (2) Half of boxes on Spectrum = **Medium Agency** (4) More than two thirds of boxes on Spectrum = **High Agency** (6) *Scored out of 6 to give double weight to current capability*	***Weighting*** **Most Countries** (0) **Many Countries** (1) **Few Countries** (2) **Very Few Countries** (3)	***Weighting*** **V low power** = 0-4 **Low power** = 5-8 **Some power** = 9-12 **High power** = 13-15	***Weighting*** **Not Feasible** (0) **Feasible w big effort** (1) **Feasible w some effort** (2) **Readily Achievable** (3)	***Weighting*** High Net -ve Externalities (0) Low Net -ve Externalities (1) Low Net +ve Externalities (2) High Net +ve Externalities (3)	***Weighting*** No Opportunity (0) Low Opportunity (2) Some Opportunity (4) High Opportunity (6)
6.3 Institutional Capacity to Govern AI Deployment	**6.3.1 Public Sector Institutional Capacity**	The ability of public-sector 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 UK Government.	Policies on AI use in government AI governance unit existence & resourcing Public sector AI risk/ex-post audits Staff AI/data literacy in oversight agencies + roles Transparency of AI use in government - registers or published documentation	Emerging	N/A	☑	☐	Emerging (2)	Medium Agency (4)	Few Countries (2)	Low Power (8)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
	6.3.2 Private Sector & Public Interest Institutional Capacity	The ability of the private sector, industry bodies, academia, and non-profits 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.	% organisations with internal AI governance structures Responsible AI adoption benchmark # firms + maturity % organisations using recognised AI governance frameworks (e.g ISO 42001, Voluntary AI safety standards) % organisations publishing AI transparency/impact reports % companies with formal internal AI audit mechanisms	Emerging	☑	☑	☐	Emerging (2)	Medium Agency (4)	Many Countries (1)	Low Power (7)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
6.4 Civic Engagement and 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 sub national forum(s) # AI related open policy consultations + responsiveness Participate rates for legislative consultations / hearings	Established	N/A	☑	☐	Established (4)	Medium Agency (4)	Few Countries (2)	Some Power (10)	Readily Achievable (3)	High Net +ve Externalities (3)	High Opportunity (6)
6.5 International Engagement	**6.5.1 Influence and 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 Institutes network collaboration; UN Independent International Scientific Panel on AI; International Telecommunication Union (ITU); International Standards Organisation (ISO).	# Participation in key global and regional governance fora e.g. UN, OECD GPAI; ITU; AI Safety Institutes Network) # International fora leadership/ rapporteur roles. Standards development participation (member type P/O): ISO/IEC JTC1/ SC42;	Established	☑	☑	☑	Established (4)	High Agency (6)	Few Countries (2)	Some Power (12)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)
	6.5.2 Access and partnerships	The ability to forge strategic partnerships for compute, data, research and development and technology access and export through trade, diplomatic, and scientific cooperation.	AUKUS Agreement; Bilateral trade agreements; AI capacity building programs.	# AI relevant Agreements $ value of Agreements $ allocated to capacity building initiatives	Emerging	☑	☑	☑	Emerging (2)	High Agency (6)	Many Countries (1)	Some Power (9)	Feasible w Some Effort (2)	High Net +ve Externalities (3)	High Opportunity (5)

TECH POLICY DESIGN INSTITUTE

AUSTRALIAN STOCKTAKES

DISCUSSION DRAFT

We propose a shift from discussions of 'AI sovereignty' to 'AI agency'. Doing so reframes the debate: from asking whether a country has wholesale 'sovereignty over AI', to asking whether a country' combination of capabilities produces the net agency, power and opportunity to steer outcomes, protect its national interests, and capture value in a globally connected system.

Here we apply TPDi's draft AI Agency Tool to Australia's AI capabilities in November 2025. We seek your feedback on both the design of the Tool and the accuracy of its application to Australia today. Have your say by 15 December 2025 at www.techpolicy.au/ai_agency

November 2025

Layer 1: Infrastructure & Resources - Stocktake

AI CAPABILITY					AI CAPABILITY	
TYPOLOGY					**STOCKTAKE**	
Common language to describe and measure different types of national AI capability					**Snapshot of Available Assessments** ***Identified through roundtable consultations, survey responses, and peer review.*** *Dark Grey - Not Enough Data* *Shades of Pink (light to dark)* *None - no identifiable capability* *Emerging - early signs of progress towards some capability* *Established - capability exists (quality variable)* *Advanced - high quality capability exists and is widely available*	
Category I	**Category II**	**Category III**	**Category IV**	**Definitions**	**Indicative 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	**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), for 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	**'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, although may include in house and dedicated private colocation compute supply.	Emerging	**Industry Access to AI Computing Infrastructure and Services'.** *National AI Centre, CSIRO*. file:///Users/techpolicy/Downloads/22-00724_DATA61_INFOGRAPHIC_AccessAI.pdf
		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	**'Institutional research computing capabilities in Australia: 2024'.** S. Kitaeff et al. *arXiv preprint.* 22 September 2025. https://arxiv.org/abs/2509.17351
						National Research Infrastructure Roadmap 2026'. *Department of Education.* Forthcoming. 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	**'Institutional research computing capabilities in Australia: 2024'.** S. 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	**'Pawsey partners with CSC, host site for LUMI, Queen of the North'.** The Pawsey Supercomputing Research Centre. October 2021. https://pawsey.org.au/pawsey-csc-mou/+G20:G27G20:G28G20:G29
						'Square Kilometre Array Observatory Treaty (shared exascale HPC for astronomy). https://www.skao.int/en/news/259/founding-members-sign-ska-observatory-treaty
						'The Worldwide LHC Computing Grid (WLCG). Distributed computing infrastructure. https://home.cern/science/computing/grid

Layer 1: Infrastructure & Resources - Stocktake

AI CAPABILITY					AI CAPABILITY	
TYPOLOGY					STOCKTAKE	
Common language to describe and measure different types of national AI capability					**Snapshot of Available Assessments** *Identified through roundtable consultations, survey responses, and peer review.* *Dark Grey - Not Enough Data* *Shades of Pink (light to dark)* *None - no identifiable capability* *Emerging - early signs of progress towards some capability* *Established - capability exists (quality variable)* *Advanced - high quality capability exists and is widely available*	
Category I	**Category II**	**Category III**	**Category IV**	**Definitions**	**Indicative 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 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).	Established	**AI Compute Sovereignty: Infrastructure Control Across Territories, Cloud Providers, and Accelerators'.** Hawkins et al. *SSRN*. June 2025.
			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 networks - to enable rapid, low latency AI inferencing. Typically owned or managed by private firms.	Emerging	**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". Dan 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 compute infrastructure owned and operated by individual firms for ongoing operational use. Not offered on-demand to customers. May include in house and dedicated private colocation compute supply.	Emerging	
		1.1.3.2 Public Sector & Public Interest Inferencing Compute	**1.1.3.2.1 Public Sector & Public Interest High-performance Inferencing Compute Clusters**	HPC systems equipped for large-scale public sector or public interest inferencing, typically used in research, environmental modelling or national security contexts.	Emerging	**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'. S. 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	**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	**On-Device Inference'** Dr David 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	**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-austral+G20;G29ian-it-modernisation-and-cloud-2025

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Category I	**Category II**	**Category III**	**Category IV**	**Definitions**	**Indicative Maturity Rating**	**Existing Assessments of this AI Capability in Australia** *(Non-Exhaustive)*
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	**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. Geoscience Australia, RMIT and Monash. https://research.monash.edu/en/publications/critical-minerals-in-australia-a-review-of-opportunities-and-rese
						'A Review of Critical Mineral Resources in Australia'. A.F. Britt and K. 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	**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/introduction-to-prospectus
						Aussie Mine Report 2024: Gold Shine 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	**From Minerals to Materials: An Assessment of Australia's Critical Minerals Mid-Stream Processing Capabilities'**. Max Temminghoff and Beni 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. https://www.ansto.gov.au/criticalmineralshub#content-projects
	1.2.2 Producing Accelerators	**1.2.2.1 Designing Accelerators (Fabless)**		Designing accelerator architectures using Electronic Design Automation (EDA) software. 'Fabless' means design is done locally while the physical chips are made offshore.	Emerging	**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
		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).	None	
		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.	None	**'Australia's Semiconductor Manufacturing Moonshot'.** Alex Capri & Robert Clark. 21 September 2022. Australian Strategic Policy Institute. https://www.aspi.org.au/report/australias-semiconductor-national-moonshot/
	1.2.3 International Agreements for Accelerator Supply			Bilateral, multilateral or commercial agreements that secure access to advanced accelerators from trusted global suppliers.	Not Enough Data	
	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.	Established	**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

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Category I	**Category II**	**Category III**	**Category IV**	**Definitions**	**Indicative Maturity Rating**	**Existing Assessments of this AI Capability in Australia** *(Non-Exhaustive)*
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).	Established	**Energy data explorer'**. 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'. Tony Wood, Alison Reeve & Richard Yan. *Grattan Institute.* 28 April 2024. https://grattan.edu.au/report/keeping-the-lights-on/
						Clean Energy Australia 2025'. *Clean Energy Council*. https://cleanenergycouncil.org.au/news-resources/clean-energy-australia-report-2025
						Australia 2023'. International Energy Agency. Energy Policy Review. 19 April 2023. https://www.iea.org/reports/australia-2023
						2024 Integrated Service Plan Generation and Storage Outlook'. Autralian Energy Market Operator. 26 June 2024.
		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.	Established	**Electicity 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 7 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=9e901f2b861843ccbd8673eb8b67819b&sc_lang=en
	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.	Established	**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 September 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'. Y. Jay Guo, Yonghui Li and Ian Oppermann. *Connectivity Innovation Network White Paper*, 17 April 2024. https://www.connectivityinnovationnetwork.com/CIN_TowardsUbiquitousConnectivity.pdf
						Australian Telecommunications Sector Resilience Profile'. Huon Curtis, Chloe Harpley, Johanna Weaver, Zoe Hawkins, James Jackson. *Tech Policy Design Centre, Australian National University.* September 2024. https://techpolicy.au/telecommunications_sector
		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.	Established	**Australia - Submarine Cable Map'.** Telegeography. Updated 1 October 2025. https://www.submarinecablemap.com/country/australia
						International Submarine Cables Landing in Australia'. *Australian Communications and Media Authority.* https://www.acma.gov.au/international-submarine-cables-landing-australia
						Connecting the Indo-Pacific: The Future of Subsea Cables and Opportunities for Australia'. Jocelinn Kang. *Australian Strategic Policy Institute.* 25 September 2024. https://www.aspi.org.au/report/connecting-indo-pacific-future-subsea-cables-and-opportunities-australia/
	1.3.3 Water Supply			The availability, reliability and sustainability of water resources, with First Nations water rights and cultural values recognised in regional planning and resource management.	Emerging	**Urban National Performance Report'.** *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.nationalwatergrid.gov.au/sites/default/files/documents/science-for-water-secure-future-report-2023.pdf

Layer 1: Infrastructure & Resources - Stocktake

AI CAPABILITY					AI CAPABILITY	
TYPOLOGY					STOCKTAKE	
Common language to describe and measure different types of national AI capability					**Snapshot of Available Assessments** *Identified through roundtable consultations, survey responses, and peer review.* *Dark Grey - Not Enough Data* *Shades of Pink (light to dark)* *None - no identifiable capability* *Emerging - early signs of progress towards some capability* *Established - capability exists (quality variable)* *Advanced - high quality capability exists and is widely available*	
Category I	**Category II**	**Category III**	**Category IV**	**Definitions**	**Indicative Maturity Rating**	**Existing Assessments of this AI Capability in Australia** *(Non-Exhaustive)*
1.3 Supporting Infrastructure & Resources	**1.3.4 Suitable Land**			Availability of appropriately zoned, infrastructure-ready land for AI compute or data-centre development - considering proximity to power, connectivity and cooling resources.	Established	**Tightening Supply of Suitable Land and Construction Delays Set to Impact Australia's Data Centre Market'.** CBRE. 10 April 2024. 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
	1.3.5 Permitting and Approvals Process			Efficiency and clarity of planning and environmental approvals for predictable and timely permitting of large scale infrastructure that enables compute.	Established	**Data Centres: APAC Regulatory Guide'.** *King & Wood Mallesons.* July 2025. https://www.kwm.com/content/dam/kwm/insights/download-publication/global/2025/Data_Centre_APAC_Regulatory_Guide_2025_Australia.pdf

Layer 2: Data Assets & Lifecycle Management - Stocktake

AI CAPABILITY				AI CAPABILITY	
TYPOLOGY				**STOCKTAKE**	
Common language to describe and measure different types of national AI capability				**Snapshot of Available Assessments** *Identified through roundtable consultations, survey responses, and peer review.* *Dark Grey - Not Enough Data* *Shades of Pink (light to dark)* *None - no identifiable capability* *Emerging - early signs of progress towards some capability* *Established - capability exists (quality variable)* *Advanced - high quality capability exists and is widely available*	
Category I	**Category II**	**Category III**	**Definitions**	**Indicative Maturity Rating**	**Asset/Policy Audit of this AI Capability in Australia** *(Non-Exhaustive)*
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.	Emerging	**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). https://www.closingthegap.gov.au/national-agreement/national-agreement-closing-the-gap/6-priority-reform-areas/four
2.2 Domain Specific Datasets	**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 language materials, audiovisual and heritage archives, social media, and media subtitling or transcription data.	Established	**'Aboriginal English Voices'.** *The University of Western Australia* (Language Lab / UWA Profiles & Research Repository). Accessed October 2025. www.uwa.edu.au/schools/research/the-language-lab
					'ACMI Film & Moving Image Collection'. *Australian Centre for the Moving Image* (ACMI). Accessed October 2025. 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. www.aiatsis.gov.au/austlang
					Language Data Commons of Australia LDaCA. Accessed October 2025. https://www.ldaca.edu.au/
	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.	Advanced	**'Medicare Benefits Schedule' (MBS).** *Australian Government Department of Health / Services Australia.* Accessed October 2025. www.mbsonline.gov.au/internet/mbsonline/publishing.nsf/content/404ref.htm
					'Pharmaceutical Benefits Scheme' (PBS). *Australian Government Department of Health / Services Australia.* Accessed October 2025. https://www.anao.gov.au/work/performance-audit/electronic-health-records-defence-personnel
					'Australian Immunisation Register' (AIR). *Services Australia / Australian Government Department of Health.* Accessed October 2025. www.servicesaustralia.gov.au/australian-immunisation-register
					'National Hospital Morbidity Database'. *Australian Institute of Health and Welfare (AIHW).* Accessed October 2025. 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. www.ndda.gov.au
					'Defence Health and Personnel Systems'. (PMKeyS, Defence eHealth) *Australian Government / Department of Defence* Accessed October 2025. www.anao.gov.au/work/performance-audit/electronic-health-records-defence-personnel
	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.	Advanced	**'Geospatial Services NSW'.** *Spatial Services* (NSW Department of Customer Service). Accessed October 2025. 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. 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.
					"Terria Platform (TerriaJS)." Developed by Geoscience Australia and the NationalMap team. Accessed October 2025. 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. www.elevation.fsdf.org.au/
					'5m LiDAR-derived Digital Elevation Model'. (DEM) *Geoscience Australia / Digital Elevation Data* Accessed October 2025. www.ga.gov.au/scientific-topics/national-location-information/digital-elevation-data
					'National Land Parcel Boundaries'. (PSMA) *PSMA Australia / Geoscape Australia* Accessed October 2025. www.www.geoscape.com.au/

Layer 2: Data Assets & Lifecycle Management - Stocktake

AI CAPABILITY				AI CAPABILITY	
TYPOLOGY				**STOCKTAKE**	
Common language to describe and measure different types of national AI capability				**Snapshot of Available Assessments** *Identified through roundtable consultations, survey responses, and peer review.* *Dark Grey - Not Enough Data* *Shades of Pink (light to dark)* *None - no identifiable capability* *Emerging - early signs of progress towards some capability* *Established - capability exists (quality variable)* *Advanced - high quality capability exists and is widely available*	
Category I	**Category II**	**Category III**	**Definitions**	**Indicative Maturity Rating**	**Asset/Policy Audit of this AI Capability in Australia** *(Non-Exhaustive)*
2.2 Domain Specific Datasets	**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.	Advanced	**'Atlas of Living Australia'.** (ALA) *CSIRO / Australian Government* Accessed October 2025. www.ala.org.au
					'Water Quality Major Open Data Collection'. *University of South Australia / SA Water / Water Research Australia* Accessed October 2025. www.data.unisa.edu.au/dap/Collection.aspx?CollectionID=95938
					'National Environmental Science Program – Climate Systems Hub'. (NESP) *Australian Government / Department of Climate Change, Energy, the Environment and Water* (DCCEEW) Accessed October 2025. www.nespclimate.com.au
					'ACCESS-ESM1.5 model output prepared for CMIP6'. *CSIRO Data Access Portal / Earth System Grid Federation.* Accessed October 2025. www.data.csiro.au/collection/csiro:45163
					'Australian Renewable Energy Mapping Infrastructure'. (AREMI) *CSIRO DataO1 / Australian Renewable Energy Agency* (ARENA) Accessed October 2025. www.arena.gov.au/projects/aremi-project/
					'Australian Mineral Deposits Database'. (OZMIN / AIMR). *Geoscience Australia (Australian Mines Atlas)* Accessed October 2025. www.portal.ga.gov.au/persona/mining-and-resources
					'Bureau of Meteorology observations & forecasts'. (BoM) *Australian Government / Bureau of Meteorology* Accessed October 2025. www.www.bom.gov.au
					'Water Data Online'. (BoM) *Australian Government / Bureau of Meteorology* Accessed October 2025. www.bom.gov.au/waterdata
					Australian Water Observations from Space'. (WOfS) *Geoscience Australia* Accessed October 2025. www.data.gov.au/data/dataset/719a5433-2af0-4601-8036-a03f77199442?
	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.	Established	**'Household, Income and Labour Dynamics in Australia'.** (HILDA) *Melbourne Institute / Australian Government Department of Social Services* Accessed October 2025
					'Australian Real-Time Macroeconomic Database'. *RBA, University of Melbourne / FBE Macroeconomic Database* Accessed October 2025. www.fbe.unimelb.edu.au/economics/macrocentre/artmdatabase
					'ABS international trade data'. *Australian Bureau of Statistics (ABS)* Accessed October 2025. www.abs.gov.au/statistics/economy/international-trade
					'Resources and Energy Quarterly'. *Office of the Chief Economist / DISR (Department of Industry, Science and Resources)* 31 March 2025. 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. Accessed October 2025 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. www.ceicdata.com/en/country/australia
	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. Critical to national capability but not publicly measurable due to commercial confidentiality.	Not Enough Data	New capability addition, call for Stocktake inputs
	2.2.7 Scientific, Synthetic and 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.	Not Enough Data	New capability addition, call for Stocktake inputs
	2.2.8 Community & Citizen Science		Data generated by individuals, families, and community groups through civic, cultural, recreational, or scientific participation. Includes citizen science, sports and hobby networks, local monitoring, and neighbourhood initiatives that reflect lived experience and place-based knowledge.	Not Enough Data	New capability addition, call for Stocktake inputs

Layer 2: Data Assets & Lifecycle Management - Stocktake

AI CAPABILITY				AI CAPABILITY	
TYPOLOGY				STOCKTAKE	
Common language to describe and measure different types of national AI capability				**Snapshot of Available Assessments** *Identified through roundtable consultations, survey responses, and peer review.* *Dark Grey - Not Enough Data* *Shades of Pink (light to dark)* *None - no identifiable capability* *Emerging - early signs of progress towards some capability* *Established - capability exists (quality variable)* *Advanced - high quality capability exists and is widely available*	
Category I	**Category II**	**Category III**	**Definitions**	**Indicative Maturity Rating**	**Asset/Policy Audit of this AI Capability in Australia** *(Non-Exhaustive)*
2.2 Domain Specific Datasets	**2.2.9 Demographic**		Population and household datasets including census microdata, vital statistics, migration, education and longitudinal household surveys.	Advanced	**'Australian Bureau of Statistics Census & Labour Force Data'.** (ABS) *Australian Bureau of Statistics.* Accessed October 2025. 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. www.lsay.edu.au
					'Population & vital statistics registers'. *Australian Bureau of Statistics / State and Territory Registries of Births, Deaths & Marriages Accessed.* October 2025. www.abs.gov.au/statistics/people/population
	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, and asset inventories critical for national resilience and automation.	Advanced	**'National Road & Rail Datasets'.** *Australian Government / Department of Infrastructure, Transport, Regional Development, Communications & the Arts (DITRDCA).* Accessed October 2025. www.catalogue.data.infrastructure.gov.au/
					'BITRE Aviation Statistics'. (BITRE) *Bureau of Infrastructure, Transport and Regional Economics / Australian Government.* Accessed October 2025. www.bitre.gov.au/statistics/aviation
					'ACCC Mobile Infrastructure Report – data release'. *Australian Competition and Consumer Commission (ACCC).* Accessed October 2025. www.data.gov.au/data/dataset/accc-mobile-infrastructure-report-data-release
					'Infrastructure Australia data (telecommunications)'. *Infrastructure Australia / Australian Government.* Accessed October 2025. www.infrastructureaustralia.gov.au/data
					'Australia mobile network benchmarking certificate'. *umlaut / Accenture.* 03 October 2023. 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. www.data.melbourne.vic.gov.au/pages/home/
					'Radio Frequency National Site Archive'. (RFNSA) *Australian Mobile Telecommunications Association (AMTA) / Mobile Carriers Forum.* Accessed October 2025. www.rfnsa.com.au
	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.	Emerging	**'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. www.data.gov.au/data/dataset/groups/austender-ict-procurement-statistics
					'Taxation statistics'. (ATO) *Australian Taxation Office.* Accessed October 2025. www.ato.gov.au/about-ato/research-and-statistics/taxation-statistics
					'Administrative Appeals Tribunal decision register'. (AAT) *Attorney-General's Department / Administrative Review Tribunal.* Accessed October 2025. www.online.aat.gov.au/eCaseSearch
2.3 Data Lifecycle Management	**2.3.1 Data Creation & Sourcing**	**2.3.1.1 Standards & Provenance**	Development and enforcement of interoperable data and metadata standards, quality frameworks, and provenance systems that ensure datasets are accurate, traceable, and validated throughout their lifecycle.	Established	**'United Nations Committee of Experts on Global Geospatial Information Management'. (UN-GGIM).** *United Nations Statistics Division.* Accessed October 2025. www.ggim.un.org/
					'International Hydrographic Organization'. (IHO). *Principality of Monaco.* Accessed October 2025. www.iho.int/en/
					'Australian Research Data Commons'. (ARDC). *Australian Government / Department of Education.* Accessed October 2025. www.ardc.edu.au/
					'National Geospatial Data'. *Geoscience Australia.* Accessed October 2025. 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. 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. www.elevation.fsdf.org.au/
					'National Environmental Satellite Data'. *Bureau of Meteorology and Geoscience Australia.* Accessed October 2025. https://www.bom.gov.au/environment/satellite-data
					'Australian Community Climate and Earth System Simulator'. (ACCESS). *CSIRO and Bureau of Meteorology.* Accessed October 2025. www.research.csiro.au/access/

Layer 2: Data Assets & Lifecycle Management - Stocktake

AI CAPABILITY				AI CAPABILITY	
TYPOLOGY				STOCKTAKE	
Common language to describe and measure different types of national AI capability				**Snapshot of Available Assessments** *Identified through roundtable consultations, survey responses, and peer review.* *Dark Grey - Not Enough Data* *Shades of Pink (light to dark)* *None - no identifiable capability* *Emerging - early signs of progress towards some capability* *Established - capability exists (quality variable)* *Advanced - high quality capability exists and is widely available*	
Category I	**Category II**	**Category III**	**Definitions**	**Indicative Maturity Rating**	**Asset/Policy Audit of this AI Capability in Australia** *(Non-Exhaustive)*
2.3 Data Lifecycle Management	**2.3.1 Data Creation & Sourcing**	**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).	Emerging	**'Framework for Governance of Indigenous Data'.** *National Indigenous Australians Agency (NIAA).* Accessed October 2025. 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. www.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. www.ardc.edu.au/resource/indigenous-data/
					Good Data'. Institute of Network Cultures. January 2019
					'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. www.internetobservatory.org.au/
	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.	Emerging	**'NSW Water Group Open Data Framework'.** NSW Department of Planning, Housing and Infrastructure / Water Group. Accessed October 2025. www.water.dpie.nsw.gov.au
					'Victorian Linkage Map (VLM)'. *Victorian Agency for Health Information (VAHI) / Victorian Department of Health.* Accessed October 2025. www.vahi.vic.gov.au/ourwork/data-linkage
					'Auditor-General Report No. 38 of 2023–24: Data Governance — Australian Taxation Office'. *Australian National Audit Office (ANAO).* 27 June 2024. https://www.anao.gov.au/work/performance-audit/data-governance-australian-taxation-office
		2.3.2.2 Annotation & Curation (for reusability)	Structured labelling, documentation, and maintenance of datasets to make them transparent, reusable, and suitable for AI training and analytics, aligned with FAIR and CARE principles.	Emerging	**'Guidance on Privacy and Developing and Training Generative AI Models'.** *Office of the Australian Information Commissioner (OAIC).* Accessed October 2025. 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. www.documentation.ardc.edu.au/cpg/research-data-australia-collection-description-qua
					'AUSTLANG: Australian Indigenous Languages Database'. *Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS).* Accessed October 2025. www.aiatsis.gov.au/austlang/search
	2.3.3 Data Access & Use	**2.3.3.1 General Use Access**	Regulatory and territorial controls defining how and where data can be processed, stored or accessed.	Emerging	**'Secure unified research environment (SURE)'.** *Sax Institute.* 2020. Accessed October 2025.
					'My Health Record'. Australian Government Department of Health. 7 August 2025. Accessed October 2025.
					'CSIRO data access portal (DAP)'. CSIRO. 2011 (public release). Accessed October 2025.

Layer 2: Data Assets & Lifecycle Management - Stocktake

AI CAPABILITY				AI CAPABILITY	
TYPOLOGY				STOCKTAKE	
Common language to describe and measure different types of national AI capability				Snapshot of Available Assessments *Identified through roundtable consultations, survey responses, and peer review.* *Dark Grey - Not Enough Data* *Shades of Pink (light to dark)* *None - no identifiable capability* *Emerging - early signs of progress towards some capability* *Established - capability exists (quality variable)* *Advanced - high quality capability exists and is widely available*	
Category I	**Category II**	**Category III**	**Definitions**	**Indicative Maturity Rating**	**Asset/Policy Audit of this AI Capability in Australia** *(Non-Exhaustive)*
2.3 Data Lifecycle Management	**2.3.3 Data Access & Use**	**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.	Established	**'Data availability and transparency Act 2022'**. Australian Government. March 2022. Accessed October 2025. www.legislation.gov.au/C2022A00011/latest/text
					'Australian Government Data Maturity Assessment Tool'. *Department of Finance*. 2024. Accessed October 2025. www.finance.gov.au/government/public-data/public-data-policy/data-maturity-assessment-tool
					'Data.gov.au'. *Australian Government.* 2024. Accessed October 2025. www.data.gov.au/data/dataset/
					'Data NSW'. *New South Wales Government.* 2025. Accessed October 2025. www.data.nsw.gov.au/data-tools/data-quality-reporting-tool
					'SEED (Sharing and Enabling Environmental Data)'. *New South Wales Government. 2025.* Accessed October 2025. www.seed.nsw.gov.au
					'Secure unified research environment (SURE)'. *Sax Institute*. 2020. Accessed October 2025. www.explore.openelectricity.org.au
					'Open Electricity'. *The Superpower Institute.* September 2024. Accessed October 2025. www.explore.openelectricity.org.au
					'My Health Record statistics and insights'. *Australian Government Department of Health*. August 2025. Accessed October 2025. 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. www.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. www.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. 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. www.datahub.freightaustralia.gov.au
					'Australian Infrastructure Audit 2019'. *Infrastructure Australia. August 2019.* Accessed October 2025. www.infrastructureaustralia.gov.au/publications/australian-infrastructure-audit-2019
					'Digital Atlas of Australia — transport layers'. *Geoscience Australia.* June 2024. Accessed October 2025. www.digital.atlas.gov.au/pages/transport
					'Creative Commons Licensing (CC-BY, CC0) in Australian Government Open Data.' *Data.Gov.Au* 2024. www.creativecommons.org/share-your-work/cclicenses/
					Personal Level Integrated Data Asset (PLIDA). Accessed October 2025. https://www.abs.gov.au/about/data-services/data-integration/integrated-data/person-level-integrated-data-asset-plida
		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.	Emerging	**'Copyright Act 1968 (Cth).'** *Australian Government.* 1968. Accessed October 2025. www.legislation.gov.au/C1968A00063/latest/text
					Text and Data Mining Copyright Reform Consultation (2023–24) / Productivity Report Five Pillars exemption proposal
					'Data Licensing and Access Terms for News Corp Datasets.' News Corp Australia. 2024. www.newscorpaustralia.com/terms-and-conditions-for-provision-of-good-and-services/

Layer 2: Data Assets & Lifecycle Management - Stocktake

AI CAPABILITY				AI CAPABILITY	
TYPOLOGY				STOCKTAKE	
Common language to describe and measure different types of national AI capability				Snapshot of Available Assessments *Identified through roundtable consultations, survey responses, and peer review.* *Dark Grey - Not Enough Data* *Shades of Pink (light to dark)* *None - no identifiable capability* *Emerging - early signs of progress towards some capability* *Established - capability exists (quality variable)* *Advanced - high quality capability exists and is widely available*	
Category I	**Category II**	**Category III**	**Definitions**	**Indicative Maturity Rating**	**Asset/Policy Audit of this AI Capability in Australia** *(Non-Exhaustive)*
2.3 Data Lifecycle Management	**2.3.3 Data Access & Use**	**2.3.3.4 Offshore Data Access (trusted transfers)**	Frameworks ensuring that any transfer, storage, or processing of Australian data offshore or by foreign entities occurs under reciprocal, privacy-compliant, and sovereign-assured arrangements.	Established	**'APEC Cross-Border Privacy Rules (certification model for trusted data transfers)'.** (CBPR) Asia-Pacific Economic Cooperation (APEC) Accessed October 2025+F95;F99
					'Australia–Singapore Digital Economy Agreement (provisions for cross-border data flows)'. Australian Government / Department of Foreign Affairs and Trade Accessed October 2025
					'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
					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
					Australia-US CLOUD Act Agreement. https://www.homeaffairs.gov.au/about-us/our-portfolios/national-security/lawful-access-telecommunications/australia-united-states-cloud-act-agreement
	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.	Emerging	**'Data retention review'.** *Australian Government Department of Health and Aged Care*. 2025. Accessed October 2025. 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. www.naa.gov.au/information-management/records-authorities/types-records-authorities/afda-express-version-2-functions
					OAIC rules . Australian Privacy Principles. https://www.oaic.gov.au/privacy/australian-privacy-principles/australian-privacy-principles-guidelines/chapter-11-app-11-security-of-personal-information
		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.	Emerging	**'Data sanitization assurance'.** *Microsoft Azure.* 2023. Accessed October 2025. www.neliehelp.zendesk.com/hc/en-gb/articles/360011575797-Data-destruction-and-sanitization
					'Digital Preservation 2020 Policy'. *National Archives of Australia.* October 2015. Accessed October 2025. 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. 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. 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. https://www.oaic.gov.au/privacy/australian-privacy-principles/australian-privacy-principles-guidelines/chapter-11-app-11-security-of-personal-information

Layer 3: Models & Applications - Stocktake

AI CAPABILITY				AI CAPABILITY	
TYPOLOGY				STOCKTAKE	
Common language to describe and measure different types of national AI capability				**Snapshot of Available Assessments** *Identified through roundtable consultations, survey responses, and peer review.* *Dark Grey - Not Enough Data* *Shades of Pink (light to dark)* *None - no identifiable capability* *Emerging - early signs of progress towards some capability* *Established - capability exists (quality variable)* *Advanced - high quality capability exists and is widely available*	
Category I	**Category II**	**Category III**	**Definitions**	**Indicative Maturity Rating**	**Existing Assessments of this AI Capability in Australia** *(Non-Exhaustive)*
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.	**3.1.1.1 Computer Vision**	Models that interpret visual inputs (images, video, sensor data) for detection, classification or understanding.	Advanced	**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 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
		3.1.1.2 Computer Audition	Models that process, recognise, and interpret sound, speech or acoustic signals.	Emerging	**'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
		3.1.1.3 Computer Linguistics	Models for text understanding, translation, and generation — including in the national semantic context.	Established	**'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
		3.1.1.4 Robotics & Physical AI	Models that perceive, act, and learn in physical environments — including autonomous mobility, manipulation and human–robot interaction.	Established	List of large language models 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
		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.	Established	**AI trends for healthcare** (2024) https://aehrc.csiro.au/wp-content/uploads/2024/03/AI-Trends-for-Healthcare.pdf
		3.1.1.6 Discovery	Models to identify new patterns, hypotheses, or designs — often in science, health or materials research.	Emerging	**LLM4SD (Large Language Model for Scientific Discovery).** *Monash University & Griffith University.* sciencedaily.com/releases/2025/02/250226142444.htm
		3.1.1.7 Planning / Optimisation	Models for optimisation, scheduling, and decision-support in dynamic environments.	Emerging	**Exemplars of Artificial Intelligence and Machine Learning in Healthcare.** 2020. https://aehrc.csiro.au/wp-content/uploads/2021/10/Exemplars-AI-in-Health-July-2020.pdf
		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.	Emerging	**'Australia's Artificial Intelligence Ecosystem: Catalysing an AI Industry'.** *CSIRO 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
		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.	Emerging	**Indigenous peoples and artificial intelligence: A systematic review and future directions.** https://journals.sagepub.com/doi/10.1177/20539517251349170?int.sj-full-text.similar-articles.6

Layer 3: Models & Applications - Stocktake

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Category I	**Category II**	**Category III**	**Definitions**	**Indicative Maturity Rating**	**Existing Assessments of this AI Capability in Australia** *(Non-Exhaustive)*
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.	**3.1.2 Model Adaptation & Alignment**	**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.	Established	**Visual Language Models for Radiology** - CSIRO AEHRC. https://www.csiro.au/en/news/All/Articles/2025/August/Visual-Language-Models Example: Heidi AI for healthcare
	Refining models to reflect specific domains, cultural or behavioural values.	**3.1.2.2 Cultural and Linguistic Alignment**	Refining models so they accurately reflect diverse local languages and First Nations communities, while respecting cultural norms and Indigenous data rights.	Emerging	**'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. DOI:10.21437/SLTU.2018-42 Example: SAIGE developed by Sapia.ai
	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.	Emerging	**'Australia Mlops Market Size & Outlook 2024-2030'**. Grand View Horizon. 2024. https://www.grandviewresearch.com/horizon/outlook/mlops-market/australia
	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.	Emerging	**AI Engineerging and Agent Engineering research.** *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/
	3.1.5 Safety and 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 for example entail developing an AI fabric with embedded guardrails as code.	Not Enough Data	
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).	Advanced	**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
	3.2.2 Sector-specific Applications		AI applications designed for a particular industry or domain, embedding domain expertise and sectoral priorities.	Established	Examples: SwarmFarm Robotics; Heidi.AI; Harrisson.ai

Layer 4: Innovation & Adoption - Stocktake

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Category I	**Category II**	**Category III**	**Definitions**	**Indicative Maturity Rating**	**Existing Assessments of this AI Capability in Australia** *(Non-Exhaustive)*
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.	Emerging	**'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 an Entrepreneurs Scoreboard'. OECD. 2023. https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/03/oecd-financing-smes-and-entrepreneurs-scoreboard-2023-highlights_6066b026/a8d13e55-en.pdf
	4.1.2 AI Native Companies		National companies developing, building, scaling and operating AI technologies, products and services at all layers of the stack.	Emerging	**'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
4.2 Rate of Adoption	**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.	Established	**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.' Amazon Web Services. August 2025. https://www.unlockingaipotential.com/australia
					'Future Ready: Australians and AI Workplace Tech.' Tech Council of Australia. July 2025. https://techcouncil.com.au/newsroom/new-report-shows-aussies-embracing-ai-in-the-workplace/
					'BCG 2024 AI Maturity Index: Which economies are ready for AI?' 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
					'Cloud & Infrastructure Report: Australia'. Datacom. 2025. https://datacom.com/au/en/solutions/cloud/insights/2025-annual-cloud-report

Layer 4: Innovation & Adoption - Stocktake

AI CAPABILITY				AI CAPABILITY	
TYPOLOGY				STOCKTAKE	
Common language to describe and measure different types of national AI capability				**Snapshot of Available Assessments** *Identified through roundtable consultations, survey responses, and peer review.* *Dark Grey - Not Enough Data* *Shades of Pink (light to dark)* *None - no identifiable capability* *Emerging - early signs of progress towards some capability* *Established - capability exists (quality variable)* *Advanced - high quality capability exists and is widely available*	
Category I	**Category II**	**Category III**	**Definitions**	**Indicative Maturity Rating**	**Existing Assessments of this AI Capability in Australia** *(Non-Exhaustive)*
4.2 Rate of Adoption	**4.2.1 Private Sector Adoption**	**4.2.1.2 SMEs & Startups**	The extent to which small and medium enterprises (SMEs) and early stage ventures adopt and integrate AI across operations, decision-making and product development.	Established	**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.
					"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.' Amazon Web Services. August 2025. https://www.unlockingaipotential.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.
					'AI Adopt Centres.' Department of Industry, Science and Resources. Accessed October 2025. https://www.industry.gov.au/news/be-part-ai-revolution-ai-adopt-centres.
	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.	Emerging	**'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.govai.gov.au/#:~:text=The%20National%20Framework%20for%20the,of%20how%20governments%20use%20AI.
					'Technical standard for government's use of artificial intelligence.' Digital Transformation Agency. September 2024. https://www.digital.gov.au/policy/ai/AI-technical-standard.
					'Automation and Artificial Intelligence Strategy 2025-2027.' 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#:~:text=The%20Department%20of%20the%20Prime,ensure%20responsible%20and%20ethical%20use
					The 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-'Proceedwith Caution'.pdf.

Layer 4: Innovation & Adoption - Stocktake

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Category I	**Category II**	**Category III**	**Definitions**	**Indicative Maturity Rating**	**Existing Assessments of this AI Capability in Australia** *(Non-Exhaustive)*
4.2 Rate of Adoption	**4.2.2 Public Sector Adoption**	**4.2.2.2 Defence & National Security**	National Intelligence community and Department of Defence (including the Defence Force)'s adoption and integration of AI cross decision-making, operations and deployment of capabilities, as well as investment and support for R&D.	Established	**'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. https://www.dairnet.com.au/. Accessed October 2025. See also **'DAIRNet 2024 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.' 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
	4.2.3.1 Public Interest Adoption	**4.2.3.1.1 Civil Society Adoption**	The extent to which non-profits and community organisations adopt AI to conduct their activities.	Emerging	**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/ and
					Australia's artificial intelligence ecosystem: growth and opportunities June 2025. NAIC - CSIRO. https://www.industry.gov.au/sites/default/files/2025-06/australias-artificial-intelligence-ecosystem-growth-and-opportunities-june-2025.pdf
		4.2.3.1.2 Research & Academia Adoption	The extent to which research and academic communities adopt AI to conduct their activities.	Established	
	4.2.3.2 Inclusive AI Adoption		Extent to which individuals have access to, and adopt and integrate AI products and services into their lives.	Emerging	**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: 2025 Australian Digital Inclusion Index. Melbourne: ARC Centre of Excellence for Automated Decision-Making and Society, RMIT University, Swinburne University of Technology, and Telstra. 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
4.3 Culture of Adoption *See also Social Licence in the Layer 6: Governance*	**4.3.1 Discerning Adoption**		Extent to which individuals and organisations approach and adopt AI in an informed, critical, and responsible way.	Established	**'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 and the University of Melbourne. April 2025. https://mbs.edu/faculty-and-research/trust-and-ai
					Talbot Mills Research/Minderoo Foundation Report on Public Perceptions of AI. August 2025 . https://cdn.minderoo.org/assets/documents/AI-attitudes-report-August-2025.pdf
					Survey Assessing Risks from Artificial Intelligence: Technical Report. Ready Research, University of Queensland. (Saeri, A.K., Noetel, M., & Graham, J). 2024. https://aigovernance.org.au/
					Global Views on AI 2023; July 2023, IPSOS . 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

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TYPOLOGY				**STOCKTAKE**	
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4.3 Culture of Adoption *See also Social Licence in the Layer 6: Governance*	**4.3.2 Trust in AI Deployment**	**4.3.2.1 Trust in Public Sector**	Public confidence in government's use and governance of AI — based on transparency, fairness, and responsiveness.	Emerging	**'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.
					'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.
					Talbot Mills Research/Minderoo Foundation Report on Public Perceptions of AI.' August 2025 . https://cdn.minderoo.org/assets/documents/AI-attitudes-report-August-2025.pdf
		4.3.2.2 Trust in Private Sector	Public and consumer confidence in private-sector use of AI, including transparency, fairness, and compliance with ethical or legal standards.	Emerging	See 'Government Adoption.'
					'Trust, Attitudes and Use of Artificial Intelligence: A Global Study 2025.' KPMG and the University of Melbourne. April 2025. https://mbs.edu/faculty-and-research/trust-and-ai
					Global Views on AI 2023; July 2023, IPSOS. https://www.ipsos.com/sites/default/files/ct/news/documents/2023-07/Ipsos%20Global%20AI%202023%20Report.pdf
					Talbot Mills Research/Minderoo Foundation Report on Public Perceptions of AI.' August 2025 . https://cdn.minderoo.org/assets/documents/AI-attitudes-report-August-2025.pdf
		4.3.2.3 Trust in Public Interest Sector	Public confidence in academic, not-for-profit, and media institutions use of AI, based on it being transparent, fit for purpose, safe and easy to use, convenient and accessible.	Emerging	**'Talbot Mills Research/Minderoo Foundation Report on Public Perceptions of AI.'** August 2025 . https://cdn.minderoo.org/assets/documents/AI-attitudes-report-August-2025.pdf

Layer 5: Skills - Stocktake

AI CAPABILITY			AI CAPABILITY	
TYPOLOGY			**STOCKTAKE**	
Common language to describe and measure different types of national AI capability			**Snapshot of Available Assessments** *Identified through roundtable consultations, survey responses, and peer review.* *Dark Grey - Not Enough Data* *Shades of Pink (light to dark)* *None - no identifiable capability* *Emerging - early signs of progress towards some capability* *Established - capability exists (quality variable)* *Advanced - high quality capability exists and is widely available*	
Category I	**Category II**	**Definitions**	**Indicative Maturity Rating**	**Existing Assessments of this AI Capability in Australia** *(Non-Exhaustive)*
5.1 Skills for building AI infrastructure and developing AI	**5.1.1 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.	Advanced	**'Empowering Australia's digital future'.** *Mandala Partners.* October 2024. Accessed October 2025. www.mandalapartners.com/uploads/Empowering-Australia%27s-Digital-Future—Report_October-2024.pdf
	5.1.2 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.	Emerging	**Australia's Semiconductor Manufacturing Moonshot: Securing Semiconductor Talent'.** Bronte Munro, Alex Capri & Robert Clark. 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
	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 Australia's scientific leadership in AI. Individual researcher capability.	Established	**'The Global Artificial Intelligence Index 2024'.** *Tortoise Media.* September 2024. Accessed October 2025. www.tortoisemedia.com/2024/09/19/the-global-artificial-intelligence-index-2024
				'Australian Science, Australia's Future: Science 2035 – full report'. *Australian Academy of Science.* September 2025. Accessed October 2025. www.science.org.au/supporting-science/australian-science-australias-future-science-2035-full
				'Australia's artificial intelligence ecosystem: Growth and opportunities'. Department of Industry, Science and Resources. June 2025. Accessed October 2025. www.industry.gov.au/sites/default/files/2025-06/australias-artificial-intelligence-ecosystem-growth-and-opportunities-june-2025.pdf
	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.	Emerging	**'Meeting the AI skills boom'.** Tech Council of Australia. 2024. Accessed October 2025. 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. 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. www.oecd.org/en/publications/emerging-trends-in-ai-skill-demand-across-14-oecd-countries_7c691b9a-en.html
	5.1.5 Research and 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, ethics, and scaling technology through Technology Readiness Levels. Innovation and commercialisation.	Emerging	**'Lightcast'.** (Global labour market and skills data overview). 2025. (Accessed October 2025).
				'Australia's AI ecosystem: Catalysing an AI industry'. Commonwealth Scientific and Industrial Research Organisation (CSIRO). December 2023. Accessed October 2025. (no link)
				Critical Technology Tracker. *Australian Strategic Policy Institute.* 2025. (Accessed October 2025). www.techtracker.aspi.org.au/
				'National competitive grants data portal'. Australian Research Council. (Accessed October 2025). 2025. www.dataportal.arc.gov.au/NCGP/Web/Grant/Grants
	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.	Emerging	**"Our Gen AI Transition Implications for Work and Skills"** *Jobs and Skills Australia* (Aug 2025) 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 www.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 www.archivemacropolo.org/interactive/digital-projects/the-global-ai-talent-tracker

Layer 5: Skills - Stocktake

AI CAPABILITY			AI CAPABILITY	
TYPOLOGY			**STOCKTAKE**	
Common language to describe and measure different types of national AI capability			**Snapshot of Available Assessments** *Identified through roundtable consultations, survey responses, and peer review.* *Dark Grey - Not Enough Data* *Shades of Pink (light to dark)* *None - no identifiable capability* *Emerging - early signs of progress towards some capability* *Established - capability exists (quality variable)* *Advanced - high quality capability exists and is widely available*	
Category I	**Category II**	**Definitions**	**Indicative Maturity Rating**	**Existing Assessments of this AI Capability in Australia** *(Non-Exhaustive)*
5.2 Skills for Deploying & Maintaining AI	**5.2.1 Business and Commercial Skills**	Commercial and operational capabilities 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.	Established	**'Building an AI-enabled workforce: Impacts for Finance, Technology and Business'.** Future Skills Organisation. February 2025. 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. www.governanceinstitute.com.au/app/uploads/2025/04/AI-deployment-and-governance.pdf
				FSO Skills Accelerator-AI. Accessed October 2025. https://www.futureskillsorganisation.com.au/skills-accelerator-ai/
				'Global Skills Report 2025'. Coursera Inc. June 2025. www.assets.ctfassets.net/2pudprfttvy6/3ELFKfTA8GBPBuRkNrOzmp5/24fc7ec2372d0adb96965340069f705c/Global_Skills_Report_2025.pdf
	5.2.2 Interdisciplinary and Domain Expertise	The ability 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.	Not Enough Data	Australia does have institutions that are actively building interdisciplinary + domain expertise for AI (UNSW, ANU, University of Adelaide).
5.3 Skills for Governing & Securing AI	**5.3.1 Assurance and 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.	Emerging	**'National Framework for the Assurance of AI in Government'.** *Australian Government / Digital Transformation Agency* (DTA). www.dta.gov.au/getting-help-dta
	5.3.2 Cybersecurity and Technical Robustness	Capabilities 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.	Established	**Asia/Pacific AI Maturity Study 2024'. IDC Australia / Intel Corporation. May 2024**. 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. www.acs.org.au/campaign/digital-pulse/download.html?utm_source=acs&utm_medium=email&utm_campaign=TRN_DP25&deliveryName=DM28666
	5.3.3 Policy and Legal Skills	Expertise 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.	Established	**'2025 AI Deployment and Governance Survey Report'.** Governance Institute of Australia. April 2025. 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'. *Global Policy.* (Rigley et al.). Accessed October 2024. www.onlinelibrary.wiley.com/doi/pdf/10.1111/1758-5899.13299
5.4 Skills for Living with AI *See also adoption rate and adoption culture, Layer 4: Innovation & Adoption)*	**5.4.1 General Public AI Literacy and Engagement**	The national ability for people to understand and use AI safely and confidently. This includes basic digital and AI literacy, awareness of bias and privacy, and the intergenerational capacity to question, engage with and refuse AI in daily life (as appropriate).	Emerging	**Digital Pulse 2024'.** *Australian Computer Society (ACS) / Deloitte Access Economics.* July 2024. www.acs.org.au/campaign/digital-pulse/download.html?utm_source=acs&utm_medium=email&utm_campaign=TRN_DP25&deliveryName=DM28666
				'Australia's AI Ecosystem: Growth and Opportunities'. National Artificial Intelligence Centre (NAIC) / Australian Government. June 2025. www.industry.gov.au/publications/australias-artificial-intelligence-ecosystem-growth-and-opportunities

Layer 6: Governance - Stocktake

AI CAPABILITY	AI CAPABILITY			
TYPOLOGY	**STOCKTAKE**			
Common language to describe and measure different types of national AI capability	**Snapshot of Available Assessments** *Identified through roundtable consultations, survey responses, and peer review.* *Dark Grey - Not Enough Data* *Shades of Pink (light to dark)* *None - no identifiable capability* *Emerging - early signs of progress towards some capability* *Established - capability exists (quality variable)* *Advanced - high quality capability exists and is widely available*			
Category I	**Category II**	**Definitions**	**Indicative Maturity Rating**	**Existing Assessments of this AI Capability in Australia** *(Non-Exhaustive)*
6.1 Government Strategy	**6.1.1 National AI Strategy and Leadership**	Existence and maturity of national AI strategy (vision, funding, implementation).	Emerging	**National AI Capability Plan development.** Department for Industry Science and Resources. 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 InternationaLEvaluation Index (AGILE Index) 2025 https://agile-index.ai/AGILE-Index-Report-2025-EN.pdf
	6.1.2 Policy Coherence	Whole-of-government policy coordination; effective integration of AI across government strategies (cyber, industrial, education, defence, foreign policy).	Emerging	**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 and liability.	Established	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
				Proposal on Mandatory Guardrails for AI in High-risk Settings. Department for Industry, Science and Resources. Accessed Ocotber 2025. https://consult.industry.gov.au/ai-mandatory-guardrails
				AI legislation Stress Test, 2025. Good Ancestors. Accessed October 2025. https://static1.squarespace.com/static/6364a71770e4605f465b714e/t/68afe58dde285f4f40bbd775/1756358029557/AI+Legislation+Stress+Test.pdf
				AI and Democratic Values Index 2025. Centre for AI and Digital Polic. Accessed October 2025. https://www.caidp.org/reports/caidp-index-2025/
				AI Tracker Australia. Herbert Smith Freehills. Accessed October 2025. https://www.hsfkramer.com/insights/reports/ai-tracker/australia
				Digital Lives of Australians 2025. AUDA . https://files.auda.org.au/documents/Digital-Lives-of-Australians-2025-report.pdf
				A critical assessment of AI governance and policy gaps in Australia" (2024). Imran, A; Assaad, Z; and Choden, T,. 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	**Australia's AI Ethics Principles.** 2019 (updated 11 Oct 2024). Department of Industry, Science and Resources. https://www.industry.gov.au/publications/australias-artificial-intelligence-ethics-principles
				AS ISO/IEC 42001:2023 **Introduction to Standards for Artificial Intelligence.** May 2023. Standards Australia 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. August 2024, Department of Industry, Science and Reousrces; National AI Centre; CSIRO. 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

Layer 6: Governance - Stocktake

AI CAPABILITY	AI CAPABILITY			
TYPOLOGY	**STOCKTAKE**			
Common language to describe and measure different types of national AI capability	**Snapshot of Available Assessments** *Identified through roundtable consultations, survey responses, and peer review.* *Dark Grey - Not Enough Data* *Shades of Pink (light to dark)* *None - no identifiable capability* *Emerging - early signs of progress towards some capability* *Established - capability exists (quality variable)* *Advanced - high quality capability exists and is widely available*			
Category I	**Category II**	**Definitions**	**Indicative Maturity Rating**	**Existing Assessments of this AI Capability in Australia** *(Non-Exhaustive)*
6.2 Legal, Regulatory, Standards & Assurance Frameworks & Capabilities	**6.2.3 Regulatory and 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	**Working Paper 1 - 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 AI in HealthCare - Legislation and Regulatory Review. 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 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
				OAIC Guidance on privacy and the use of commercially available AI products. 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
				ASIC Enhanced Regulatory Sandboxes https://www.asic.gov.au/for-business-and-companies/innovation-hub/enhanced-regulatory-sandbox-ers/ **Digital Platform Regulators Forum**. Australian Government. Accessed October 2025. https://dp-reg.gov.au/ **ASIC Report: Beware the gap: Governance arrangements in the face of AI innovation, Oct 2024** https://download.asic.gov.au/media/mtllqjo0/rep-798-published-29-october-2024.pd
	6.3.1 Public Sector Institutional Capacity	The ability of public-sector 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	**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 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
	6.3.2 Private Sector & Public Interest Institutional Capacity	The ability of the private sector, industry bodies, academia, and non-profits to implement, monitor and self-govern AI systems responsibly. Includes organisational AI ethics boards, risk assessment processes, and transparency or impact reporting practices.	Emerging	**Responsible AI maturity self-assessment tool and Report August 2025.** National AI Centre – Fifth Quadrant. 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. 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
				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

Layer 6: Governance - Stocktake

AI CAPABILITY			AI CAPABILITY	
TYPOLOGY			**STOCKTAKE**	
Common language to describe and measure different types of national AI capability			**Snapshot of Available Assessments** ***Identified through roundtable consultations, survey responses, and peer review.*** *Dark Grey - Not Enough Data* *Shades of Pink (light to dark)* *None - no identifiable capability* *Emerging - early signs of progress towards some capability* *Established - capability exists (quality variable)* *Advanced - high quality capability exists and is widely available*	
Category I	**Category II**	**Definitions**	**Indicative Maturity Rating**	**Existing Assessments of this AI Capability in Australia** *(Non-Exhaustive)*
6.4 Civic Engagement and 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.	Established	**Stanford HAI Global AI Index 2025.** https://hai.stanford.edu/assets/files/hai_ai_index_report_2025.pdf
				Attorney General's Copyright and AI Reference Group. Australian Attorney General's Departement, 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. 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) . Australian Parliament House. Accessed OCtober 2024. https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Adopting_Artificial_Intelligence_AI/AdoptingAI/Public_Hearings
6.5 International Engagement	**6.5.1 Influence and 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.	Established	**Founding member of the International Network of AI Safety Institutes; signed the Seoul Declaration May 2024, Bletchley Declaration May 2023.** 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.
				Hiroshima Principles Friends Group member. 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 (incl. responsible AI and data-governance working groups). Accessed October 2025. https://oecd.ai/en/about/about-gpai
	6.5.2 Access and partnerships	The ability to forge strategic partnerships for compute, data, research and development and technology access and export through trade, diplomatic, and scientific cooperation.	Emerging	**AUKUS Agreement: Pillar 2 (Advanced Capabilities).** Accessed October 2024. https://pmtranscripts.pmc.gov.au/sites/default/files/AUKUS-factsheet.pdf
				Australia–Singapore Memorandum of Understanding on Cooperation on Artificial Intelligence (Dec 2024) . Accessed October 2025. https://www.industry.gov.au/publications/memorandum-understanding-cooperation-artificial-intelligence-between-australia-and-singapore
				2024-2028 Southeast Asia and Pacific Cyber Program. $43.2m. https://www.dfat.gov.au/international-relations/themes/cyber-affairs-and-critical-technology/capacity-building
				Australia-India Cyber and Critical Technology Partnership (AICCTP). https://www.dfat.gov.au/international-relations/themes/cyber-affairs-and-critical-technology/india-partnership
				Australia- UK Cyber and Critical Technology Partnership. https://www.industry.gov.au/news/australia-and-uk-build-their-critical-technology-partnership
				EU Australia Framework Agreement and Science and Technology Cooperation Agreement. 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
				EU Australia Framework Agreement and Science and Technology Cooperation Agreement. 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