Age Assurance Technology Trial

PART K
Glossary, Bibliography & Literature Review

August 2025

Funded by

Australian Government
Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts

Project by

Age Check Certification Scheme

Our Core Principles

These principles guided every stage of the Trial. They reflect the ethical standards we applied in assessing technologies and engaging participants.

1 Respect

We honour the inherent worth, autonomy and diverse backgrounds of all participants – particularly children – through culturally sensitive, age-appropriate engagement.

2 Transparency

We commit to open communication about the Trial's purpose, scope, methods and outcomes – empowering trust, understanding and public confidence.

3 Accountability

We uphold clear governance and independent oversight – enabling concerns to be raised, reviewed and acted on with integrity.

4 Fairness

We pursue equity and inclusivity – actively addressing bias to ensure impartial treatment and representation across all demographics.

5 Privacy

We safeguard participant privacy through data minimisation, secure handling and respectful collection aligned with human dignity.

6 Safeguard Children

We prioritise child safety and wellbeing – ensuring informed participation, adherence to rights and protection through every Trial phase.

Accessibility Statement:

This report was produced in line with the accessibility guidelines found in the Australian Government Style Manual.

Legal Clearance Statement:

This report includes references to ISO standards through summarisation, referencing and reproduction of definitions only. While the material is not reproduced verbatim, ISO asserts copyright over its publications. For any further use or licensing queries, contact Standards Australia at: copyright@standards.org.au.

Published By:

Age Check Certification Scheme
Unit 321B Broadstone Mill, Broadstone Road
Stockport, United Kingdom, SK5 7DL

www.accscheme.com
ISBN 978-1-0681646-9-9


ONE
WAY

Table of contents

Introduction and Glossary

I

Literature Review

II

Media Coverage

III

Bibliography

IV

Age Assurance Technology Trial

PART K
Introduction and Overview

K.1 Introduction to Part K: Glossary, Bibliography and Literature Review

K.1.1 Part K of the Age Assurance Technology Trial acts as a resource document to aid comprehension of the report as a whole. It encompasses a Glossary of Terms delineating vocabulary relating to Age Assurance, Parties and Actors, terms relating to the Australian Context and also includes Abbreviations used in the reports. These Glossary terms are used consistently throughout the suite of reports and are central to understanding their contents.

K.1.2 Each report also has its own Bibliography section which follows a hierarchy of sources; from Legal documents and the Law, to Standards and Normative References, official Government publications and Journals, Articles and Learned Works, the Bibliography explores international literature which informed the Trial's evaluation design and ensured it addressed known challenges and gaps.

K.1.3 The UN Convention on the Rights of the Child (UNCRC)[1], The Privacy Act 1988[2] and the emerging ISO/IEC FDIS 27566-1 Age Assurance Systems – Framework Standard[3], are just a few of the documents and pieces of legislation that the Trial took into consideration.

1. *The UN Convention on the Rights of the Child (UNCRC) is an important, legally binding agreement signed by 196 countries (as of 12 July 2022) which outlines the fundamental rights of every child, regardless of their race, religion or abilities. The UNCRC entered into force on the 2nd September 1990, in accordance with article 49, which means that Governments that ratify this convention are bound to it by international law.*

2. *The Privacy Act 1988 was introduced to promote and protect the privacy of individuals and to regulate how Australian Government agencies and organisations with an annual turnover of more than $3 million, and some other organisations, handle personal information.*

3. *All references to ISO/IEC FDIS 27566-1 Standard throughout the suite of reports are referring to ISO/IEC FDIS 27566-1 - Information security, cybersecurity and privacy protection - Age assurance systems - Part 1: Framework.*

K.1.4 Part K's Bibliography section is by far the most comprehensive as it references all of the material contained within the Literature Review, detailing first the current age restrictions in place across Australia, before examining consumer attitudes towards age assurance technology, research studies, rapid evidence reviews and reports into the technology and then reflecting on age assurance from a uniquely Australian perspective. This includes consideration of the eSafety Commissioner's Call for Evidence into Age Assurance, the Australian Signals Directorate's Information Security Manual and Australia's Digital ID System.

K.1.5 Part K also provides a summary of the Media Coverage that the Age Assurance Technology Trial received over a one year period, from May 2024 – June 2025.

K.2 Glossary

| K.2.1 Terms and definitions

Interpretation

- Words not defined in this Glossary are to be interpreted according to their common usage, with reference to the Macquarie Dictionary[4] or, where appropriate, the Oxford English Dictionary[5].
- 'Including' and 'includes' are not words of limitation.
- A word that is derived from a defined word has a corresponding meaning, unless otherwise defined.
- The singular includes the plural and vice-versa where the context requires.
- A reference to a thing includes each part of that thing.

4. *With more than 160,000 words and phrases, and more than 240,000 definitions, the Macquarie Dictionary database offers a comprehensive and authoritative record of Australian English. It can be accessed here:*

5. *The OED is the definitive record of the English language, featuring 600,000 words, 3 million quotations, and over 1,000 years of English. It can be accessed here:*

| K.2.2 Age Assurance Terms

Age	means the number of complete years, months, days that have passed since the date of birth of an Individual [Source: ISO/IEC FDIS 27566-1, 3.1.3]
Age Analysis	means the correlation of behavioural and biological characteristics of humans that vary with age [Source: ISO/IEC FDIS 27566-1, 3.3.13]
Age Assurance	means the set of processes and methods used to verify, estimate or infer the age or age range of an Individual, enabling organizations to make Age-related Eligibility Decisions with varying Degrees of Certainty [Source: ISO/IEC FDIS 27566-1, 3.1.1]
Age Assurance Method	means the method used to establish an Age Assurance Result to varying Degrees of Certainty [Source: ISO/IEC FDIS 27566-1, 3.3.2]
Age Assurance Result	means information produced by an Age Assurance System indicating that an individual is a certain age, over or under a certain age or within an age range [Source: ISO/IEC FDIS 27566-1, 3.1.2]
Age Assurance System	means a system that utilises one or more Age Assurance Methods to provide the Relying Party with the necessary information to make an Age-related Eligibility Decision [Source: ISO/IEC FDIS 27566-1, 3.3.3]

K.2.2 Age Assurance Terms (continued)

Age Estimation	means the Age Assurance Method based on analysis of biological or behavioural features of humans that vary with age [Source: ISO/IEC FDIS 27566-1, 3.1.11]
Age Inference Method	means an age assurance method based on verified information which indirectly implies that an individual is over or under a certain age or within an age range [Source: ISO/IEC FDIS 27566-1, 3.1.12]
Age Inference System	means an Age Assurance System that utilises the Age Inference Method
Age-related Eligibility	means qualification for access to goods, content, services, venues or spaces based on an age limit or an age band [Source: ISO/IEC FDIS 27566-1, 3.1.7]
Age-related Eligibility Decision	means an action by a Relying Party to determine access to goods, content, services, venues or spaces based on an age limit or an age band [Source: ISO/IEC FDIS 27566-1, 3.1.9]
Age-related Eligibility Requirement	means policy requirement for access to goods, content, services, venues or spaces based on an age limit or an age band [Source: ISO/IEC FDIS 27566-1, 3.1.8]

K.2.2 Age Assurance Terms (continued)

Age Verification	means the Age Assurance Method based on calculating the difference between a verified year or date of birth of an Individual and a subsequent date [Source: ISO/IEC FDIS 27566-1, 3.1.10]
Attack Vector	means the path or means by which one or more persons attempts to circumvent the age assurance system in order to obtain a malicious outcome [Source: ISO/IEC FDIS 27566-1, 3.3.10]
Bias	means a systematic error or deviation introduced into a process, measurement or outcome, leading to results that do not accurately reflect the intended objectives or population
Binding	means the property that relates an Age Assurance Result to the correct Individual [Source: ISO/IEC FDIS 27566-1, 3.3.18]
Biometric Presentation Attack	means presentation to the biometric capture subsystem with the goal of interfering with the operation of the biometric system [Source: ISO/IEC 30107-1:2023, 3.5]
Configuration Management	means the activity of managing the configuration of an information system throughout its life cycle [Source: ISO/IEC FDIS 27566-1, 3.3.19]

K.2.2 Age Assurance Terms (continued)

Contra Indicators	information that calls into question or otherwise indicates that either an age assurance result may not be correct or that the binding of the age assurance result to the right individual may not be correct or both [Source: ISO/IEC FDIS 27566-1, 3.3.11]
Coroner	means a magistrate (or judicial officer) appointed under state or territory coronial law to investigate certain deaths, suspected deaths, fires or disasters and to determine their causes and circumstances in the public interest. [Source: Coroners Act (jurisdiction-specific), e.g. Coroners Act 2009 (NSW)]
Cybersecurity	means the measures used to protect the confidentiality, integrity and availability of systems and information in cyberspace. [Source: Australian Cyber Security Centre (ACSC), part of the Australian Signals Directorate (ASD)]
Deepfake	means a digital photo, video or sound file of a real person that has been edited to create an extremely realistic but false depiction of them doing or saying something that they did not actually do or say. They are created using artificial intelligence software that draws on a large number of photos or recordings of the person to model and produce content. [Source: eSafety Commissioner's "Deepfake trends and challenges"]

K.2.2 Age Assurance Terms (continued)

Degree of Certainty	means the extent to which it is possible to be confident that a given fact is true [Source: ISO/IEC FDIS 27566-1, 3.3.4]
Digital Footprint	means information about an Individual that is captured because of their online activity or because of their interaction with some devices [Source: ISO/IEC FDIS 27566-1, 3.3.20]
Evidence	means information supporting the occurrence of an event or action [Source: ISO/IEC FDIS 27566-1, 3.1.6]
False Negative	means an incorrect measured value in negative results, that is, the case where the measured value is negative but the correct one is positive [Source: ISO/IEC FDIS 27566-1, 3.3.8]
False Positive	means an incorrect measured value in positive results, that is, the case where the measured value is positive but the correct one is negative [Source: ISO/IEC FDIS 27566-1, 3.3.7]
Functional Testing	means Testing of a software system's functions to validate the implementation of its functional requirements [Source: Age Assurance Technology Trial – D2.9 Evaluation Proposal – P.85]

K.2.2 Age Assurance Terms (continued)

Ground-truthed Training Data	means biological or behavioural training data that is associated with a known or established date of birth [Source: Age Assurance Technology Trial – D5.3 Preliminary Report – P.21]
Identity	means a set of attributes related to an entity [Source: ISO/IEC FDIS 27566-1, 3.1.4]
Identity Document	means physical or digital document issued by an Authoritative Party containing identifying attributes of an Individual [Source: ISO/IEC FDIS 27566-1, 3.1.5]
Injection Attack Vector	means a user is able to bypass the sensor on a device and inject code or images into the Age Assurance System workflow
Interoperability	means how well the Age Assurance System can be used across multiple online platforms [Source: IEEE Standard Computer Dictionary]
Online Platform	means a service that allows end-users to access Material using a carriage service; or a service that delivers Material to persons having equipment appropriate for receiving that Material, where the delivery of the service is by means of a carriage service. This does not include a broadcasting service; or (a datacasting service [Source: Broadcasting Services Act 1992]

K.2.2 Age Assurance Terms (continued)

Parental Consent	means the legal permission provided by a parent or guardian for a child to participate in an activity, access a service or have their personal information collected, used or disclosed, where the child is not considered capable of giving informed consent themselves. [Source: Privacy Act 1988, OAIC Guidance]
Parental Control	means software or device-level tools that help parents and carers monitor, filter or restrict what a child can access online, as well as manage screen time and in-app purchases.
Parental Control Service Provider	means an Age Assurance Provider whose Age Assurance System utilises Parental Control Systems
Parental Control System	means a set of tools or settings that allow parents or guardians to manage, restrict or monitor a Child's access to digital content, services or device functions
Personal Data	means information or an opinion about an identified individual, or an individual who is reasonably identifiable, whether the information or opinion is true or not and whether the information or opinion is recorded in a material form or not [Source: Privacy Act 1988 – Part II – Interpretation]
Practice Statement	means the documentation of the practices, procedures and controls employed by an organization to fulfil a service [Source: ISO/IEC FDIS 27566-1, 3.1.14]

K.2.2 Age Assurance Terms (continued)

Presentation Attack	a spoofing attack is a specific attack vector when an individual is attempting to try to fool the age estimation method, e.g.,. by trying to look older than they really are by wearing a hat, glasses, a fake beard or a fake moustache. [Source: ISO/IEC FDIS 27566-1, 8.3.4]
Privacy Breach	means Personal Data is accessed, disclosed without authorisation, or is lost
Privacy by Design	means a proactive approach that embeds privacy into the development and operation of the Age Assurance Systems from the outset and throughout their lifecycle [Source: ISO/IEC FDIS 27566-1, 7.2]
Reliability	means how consistently the Age Assurance System can produce the same result
Research Methodology	means as set out in the D2.9 Evaluation Proposal
Sensitivity	means the technology's ability to correctly detect people who are over the age threshold. It is the proportion of the sample who have been predicted as being over the age threshold among those who are over the age threshold

K.2.2 Age Assurance Terms (continued)

Specificity	a spoofing attack is a specific attack vector when an individual is attempting to try to fool the age estimation method, e.g.,. by trying to look older than they really are by wearing a hat, glasses, a fake beard or a fake moustache. [Source: ISO/IEC FDIS 27566-1, 8.3.4]
Spoofing Attack	means a specific attack vector when an Individual is attempting to try to fool the age assurance system, by presenting themselves to the system with artificial alterations such as wearing a fake beard
Statistical Analysis	means the use of mathematical methods to reduce sizeable bodies of numerical data into a small number of summary statistics from which useful conclusions may be drawn; [Source: ISO/TS 17755-2: 2020 - Statistical data collection – Part 2: Vocabulary – 3.77]
Statistics	means item of numerical data, or a quantity computed as a function on a body of numerical data, or the function itself [Source: ISO/TS 17755-2: 2020 - Statistical data collection – Part 2: Vocabulary – 3.76]
Successive Validation	means type of age assurance process where multiple independent age assurance methods are used sequentially to establish an Age Assurance Result [Source: ISO/IEC FDIS 27566-1, 3.1.13]

| K.2.3 Parties and Actors

User Journey	means the sequence of steps a User takes to accomplish a specific goal while interacting with a product, service or system [Source: Age Assurance Technology Trial – D2.9 Evaluation Proposal – P.87]
Adult	means an individual over the age of 18
Age Assurance Provider	means an entity responsible for providing Age Assurance Results to a Relying Party [Source: ISO/IEC FDIS 27566-1, 3.2.1]
Age Estimation Service Provider	means an Age Assurance Providers whose Age Assurance System utilises the Age Estimation Method
Age Inference Service Provider	means an Age Assurance Provider whose Age Assurance System utilises the Age Inference Method
Authoritative Party	means an entity that is recognized to have the right to create and manage a record that contains a set of attributes that allows an Individual to be uniquely identified within a given context [Source: ISO/IEC FDIS 27566-1, 3.2.6]
Authoritative Source	means a repository which is recognised as being an accurate and up-to-date source of information [Source: ISO/IEC FDIS 27566-1, 3.2.7]
Child	means an Individual who is below 16 years of age

K.2.3 Parties and Actors (continued)

eSafety Commissioner	means an independent government agency that helps Australians deal with online harms such as cyberbullying, adult cyber abuse, image-based abuse and illegal content.
Individual	means a human being, i.e. a natural person, who acts as a distinct indivisible entity or is considered as such [Source: ISO/IEC FDIS 27566-1, 3.2.9]
Policy Maker	means an entity responsible for establishing Age-Related Eligibility Requirements for access to goods content, services, venues or spaces [Source: ISO/IEC FDIS 27566-1, 3.2.4]
Relying Party	means an entity that relies on an Age Assurance Result to make an Age-related Eligibility Decision [Source: ISO/IEC FDIS 27566-1, 3.2.2]


SHOP
PARK
SHOP

| K.2.4 Australian Context

Aboriginal person	means a person of Aboriginal descent who identifies as an Aboriginal and is accepted as such by the community in which he or she lives [Source: Commonwealth Department of Aboriginal Affairs, *Report on a Review of the Administration of the Working Definition of Aboriginal and Torres Strait Islanders* (1981)]
Australian Privacy Laws	means the *Privacy Act 1998*
First Nations People	means Aboriginal and Torres Strait Islander Peoples
Indigenous Populations	means First Nations People
Torres Strait Islander Person	means a person of Torres Strait Islander descent who identifies as a Torres Strait Islander and is accepted as such by the community in which he or she lives
The Trial	means the Age Assurance Technology Trial commissioned by the Australian Government to examine options to protect children from harmful content as well as harms on social media

| K.2.5 Abbreviations

AEC	means the Australian Electoral Commission
AIATSIS	means Australian Institute of Aboriginal and Torres Strait Islander Studies; AIATSIS Code of Ethics means the Institute's Code of Ethics
API	means Application Programming Interface
DITRDCSA	means the Department of Infrastructure, Transport, Regional Development, Communications, Sports and the Arts
Fintech	means Financial Technology
IETF	means Internet Engineering Task Force
ISM	means the Australian Government's Information Security Manual, produced by the **Australian Signals Directorate** (ASD)
ISP	means Internet Service Provider
JAS-ANZ	means Joint Accreditation Systems of Australia and New Zealand
MDL	means Mobile Driving Licence
MNO	means Mobile Network Operator
NIST	means the National Institute of Standards and Technology; **NIST FATE** means Face Analysis Technology Evaluation
OAIC	means the Office of the Australian Information Commissioner

K.2.5 Abbreviations (continued)

OWASP	means the Open Worldwide Application Security Project
PCI-DSS	means Payment Card Industry Data Security Standard
SoC2	means System and Organization Controls 2
SAB	means the Trial's Stakeholder Advisory Board
SDK	means Software Development Kit
UNCRC	means the United Nations Convention on the Rights of the Child
VPN	means a Virtual Private Network
W3C	means World Wide Web Consortium


DHL
RESCUE

Age Assurance Technology Trial

PART K
Literature Review

In this Literature Review, all of the footnote references are collated together as references at the end of the Literature Review on P.60 - P.67.

K.3 Age Restrictions in Australia

K.3.1 To define the age restrictions in-scope of the Trial, it is critical to understand the major age restrictions already in place across Australia, in both online and offline contexts. Age restrictions for various products and services are set out below.

Knives and Controlled Items

K.3.2 In the retail sector, knives and other controlled items are restricted from sale to individuals below a certain age.[1] This varies across states as follows:

State/Territory	Minimum Age for the Purchase of Knives and Controlled Items
New South Wales (NSW)	16
Western Australia (WA)	18
South Australia (SA)	16
Victoria (VIC)	18
Australia Capital Territory (ACT)	16
Queensland	18
Northern Territory	No specific legislation applies
Tasmania	No specific legislation applies

Smoking

K.3.3 Across all of Australia, it is illegal to sell or supply tobacco products to people under the age of 18[2]. In some states, the police can confiscate cigarettes or other tobacco products found in the possession of those under 18 years old.

Vaping

K.3.4 Vapes and vaping products, which may or may not contain nicotine, can only be sold by pharmacies to support people quit smoking or managing nicotine dependence.[3] The Public Health (Tobacco and Other Products) Act 2023 was passed to facilitate this on 1st July 2024.[4]

K.3.5 Since 1st October 2024, the minimum age to purchase vapes from participating pharmacies with a nicotine concentration of 20 mg/mL or less without a prescription is 18, where state and territory laws allow.

K.3.6 People under 18 years of age can access vapes but only with a prescription, where state and territory laws allow, to ensure they get appropriate medical advice and supervision.

Alcohol

K.3.7 The minimum legal age for the purchase or consumption of alcohol in a licensed venue or from a retail shop is 18.[5]

K.3.8 In some states and territories, it is legal to supply alcohol if you have approval from a child's parent or guardian. In others, it is only legal if you are the parent or guardian.

K.3.9 In all states and territories, it is illegal to supply people under 18 with alcohol if responsible supervision is not provided.[6]

K.3.10 Responsible supervision refers to:

- If the adult supplying the alcohol is intoxicated
- If the young person is intoxicated
- The age of the young person
- The type and amount of alcohol supplied and over what period of time
- If the young person has eaten food with the alcohol
- How the young person is supervised by the adult supplying the alcohol.[7 8 9 10 11 12]

K.3.11 The laws across different states and territories are as follows:

- In the ACT, NSW, SA, TAS, VIC and WA (see table on P.29) alcohol can be provided to minors in a private home **if**:
  - Provided by the parent/guardian or with permission of the parent/guardian
  - Provided with responsible supervision.[13]

- In the Northern Territory and Queensland alcohol can be provided to minors in a private home **if**:
  - Provided by the parent/guardian, step-parent or adult who has parental rights and responsibilities
  - Provided with responsible supervision.[14]

Gambling

K.3.12 The minimum legal age for gambling is 18 years. There is no single law that sets this universally across Australia, instead this is governed by a combination of federal, state and territory laws. For example, in Victoria, Section 10.7.3 of the Gambling Regulation Act 2003 states that "A gambling provider must not allow a minor to gamble".[15] This fixed legal age applies to lottery ticket purchasing, sports betting and race betting, bingo, casino games, poker and all real money betting. Sports betting is the only form of online gambling legally permitted to be offered to Australian residents from domestically based sites.[16]

K.3.13 *Films (including Adult Films) and Computer Games*

The Guidelines for the Classification of Film 2012 legislation[17] and the Australian Classification Board (ACB)[18] define the follows advisory ratings and associated age restrictions:

Rating Type	Rating	Description	Age Restriction
Advisory	General (G)	The content is very mild in impact.	None
Advisory	Parental Guidance (PG)	The content is mild in impact.	Not recommended for viewing by children under the age of 15 without guidance of a parent or guardian.
Advisory	Mature (M)	The content is moderate in impact.	Not recommended for children under the age of 15. But they may legally access this content.
Legally Restricted	Mature Accompanied (15+)	The content is strong in impact.	Minimum age of 15. But a parent or adult guardian must purchase a ticket and accompany a person under 15 for the duration of the film at a cinema or be with them to purchase a MA 15+ film or game.
Legally Restricted	Restricted (R 18+)	The content is high in impact.	Minimum age of 18 years old.
Legally Restricted	Restricted (X 18+)	Adult films containing sexually explicit activity.	Minimum age of 18 years old.
Legally Restricted	Refused Classification	Contains content that is outside generally accepted community standards and exceeds what can be included in the R 18+ and X 18+ ratings.	Cannot be sold, hired, advertised or legally imported in Australia.

Online Safety

K.3.14 Sections of online industry under the Online Safety Act 2021[19] include providers of social media, app distribution, hosting, and internet carriage services, as well as persons who manufacture, supply, maintain or install certain equipment.

K.3.15 Part 9 of the Act, known as the Online Content Scheme, defines two classes of illegal and restricted material (in the form of text, data, speech, music, other sounds, visual images moving or otherwise, any other form or a combination of forms):

- Class 1 material that is classified or is likely to be classified, as 'Refused Classification' under the National Classification Scheme
- Class 2 material that is classified or is likely to be classified, as either X 18+ or R 18+ under the National Classification Scheme.

K.3.16 The Act requires the development of separate industry codes targeting Class 1 and Class 2 material. Under this framework, Phase 1 industry codes apply to specific sectors of the online industry and address Class 1A and Class 1B material[20], such as child sexual exploitation content and pro-terror material. These codes include measures related to age restrictions to prevent access and exposure by minors. The Act also enables the creation of industry codes tailored to participants across different sections of the online industry, ensuring a consistent and sector-specific response to harmful content.

K.3.17 The Head Terms governing the Phase 2 Codes, which primarily concern access to class 2 material[21], encompassing age-inappropriate content (such as online pornography) set out a non-exhaustive list of examples of age assurance measures that will be considered appropriate, which include:

- Matching of photo identification;
- Facial age estimation;
- Credit card checks;
- Digital identity wallets or systems;
- Attestation by a parent or guardian of age or whether an Australian end-user is a child;
- Use of artificial intelligence to estimate age based on relevant data inputs;
- Other measures meeting the requirements of section 8 (Confirmation of age) of the Online Safety (Restricted Access Systems) Declaration 2022; and
- Relying upon appropriate age assurance measures implemented in respect of the relevant end-user by: (1) another party (whether another industry participant, government agency, a third party vendor or another third party) and confirmed by an age signal or other mechanism provided to the service provider by that other party; or (2) the service provider in respect of another service as contemplated in clause 5.1(c)(vi)

K.3.18 A Restricted Access System is an access-control system that meets the requirements under the Online Safety (Restricted Access Systems) Declaration 2022 (RAS Declaration). This sets out the minimum requirements for access-control systems used by social media services, relevant electronic services and designated internet services provided from Australia.[22]

K.3.19 Rather than mandating specific technologies or processes, the RAS Declaration states that an access-control system must:

- Require an application be made by a person to access the relevant material, declaring they are at least 18
- Incorporate reasonable steps to confirm an applicant is at least 18
- Give warnings about the nature of the material and safety information about how a parent or guardian may control access to the material
- Limit access to the material unless certain steps are followed

K.3.20 The development of Phase 2 industry codes – focused primarily on access to and exposure to Class 2 material – began on 1 July 2024[23], with public consultation on the draft codes concluding in late November 2024. By May 2025, codes for each section of the online industry were submitted to the eSafety Commissioner for registration. On 30 June 2025, the Commissioner registered three of the nine submitted codes, covering search engine services, enterprise hosting services, and internet carriage services. The remaining draft codes have not yet been endorsed, and as of July 2025, the Commissioner is undertaking an assessment of whether they meet the statutory requirements for registration.

K.3.21 The eSafety Commissioner's Roadmap for Age Verification includes a recommendation that if a service allows pornography, "it should apply settings to prevent it from being accessed by and recommended to children. Among other things, this requires robust age assurance measures".[24] The phase 2 codes position paper[25] provides further, more robust guidance on where and how the eSafety Commissioner expects to see age assurance deployed to reduce the risk of children's access to pornography. These include providing protections across every level of the technology stack, such as age assurance measures, filters, parental controls, safety settings and others. Another element of this guidance is leveraging digital ecosystems for privacy-protecting, data minimising age assurance and complementary safety measures. eSafety believes that existing internet ecosystems can effectively leverage existing end user information gathering processes for privacy-protecting, data-minimising age assurance and complementary safety measures. The last element is building on pre-existing regulatory schemes which aim to protect and prevent children from accessing class 2 material. These schemes include the Restricted Access Systems (RAS) declaration, and the Basic Online Safety Expectations (BOSE) determination.

K.4 Consumer Attitudes

K.4.1 Considering that user journeys will be impacted by the deployment of age assurance technologies, a key focus in the literature is on consumer attitudes of the technology. Prominent studies of consumers in Australia and the UK are described below.

K.4.2 Boichak, Humphry and Hutchinson[26] studied Australian teenagers aged 12-17 and their parents, using focus groups, co-design workshops and a national survey of 1,200 participants conducted between 2022 and 2023. Their findings suggest that age verification is generally supported, with 72% of young people and 86% of parents believing that more effective age limits would improve online safety for young people. However, participants think it likely would not work. They considered other approaches as better options to keeping people safe online, including more safety education, face-to-face dialogue and accountability from social media companies. Concerns about data protection and privacy were raised by both children and adults, specifically around sharing identity documents with online services to prove age and the risk of data breaches and leaks of sensitive information.

K.4.3 The Family Online Safety Institute (FOSI) conducted research which includes includes a cross-country comparison of views on age assurance held by parents and children in the US, UK and France.[27] This consisted of two parts, firstly a qualitative part with seventy-one parents and children across the US, UK, and France. The second part was a quantitative survey of 3,000 parents and children evenly distributed across the three countries. The report has 10 key findings:

1. Parents are highly engaged with their children's digital lives and are invested in facilitating a safe, positive online experience.
2. Children, like parents, want safe and positive online experiences, and children understand that parents monitor online activity with good intentions.
3. Parents see themselves as having the most responsibility for managing their children's access to age-appropriate content, more so than technology companies or the government.
4. Even as parents feel this strong sense of responsibility, they also want more involvement from relevant partners to help safeguard their children.
5. Children also desire an active role in the processes that will shape their digital lives, even if they are not always comfortable discussing their online activities with parents.
6. Age assurance is seen by parents and children as being more about restricting access to content, rather than ensuring safe and beneficial online experiences.
7. There is no clear 'winner' or standout approach when respondents are asked about their preference for current age assurance methods.
8. This ambivalence appears to come down to a question of balancing invasiveness vs. effectiveness.
9. The applied use of biometrics appears to be a promising method of age assurance, as parents and children view it as effectively assessing age.
10. Parents seek age assurance solutions that are effective yet convenient, and they gravitate toward settings that achieve both.

K.4.4 In 2023, the eSafety Commissioner researched the attitudes of young people towards age assurance and the age-based restriction of access to online pornography.[28] This mixed methods research comprised of an online survey of 1,004 participants followed by online focus groups where 32 young people (aged 16 - 18) participated. One key finding was that participants were generally in favour of the regulation of online pornography for people under the age of 16. However, they thought that age assurance would be of limited efficacy and expressed concerns about its implementation. Despite this, the young people surveyed thought that pornography sites, dating sites and social media services should use age assurance tools to restrict underage access to online porn.

K.4.5 Another study by the eSafety commissioner, this time in 2021, focused on adults' perceptions of age verification for limiting access to pornography.[29] Using a survey of 1,200 adults, the study identified broad support for age verification as a safeguard for children, even though the general community was unfamiliar with it conceptually and in practice. There was ambivalence and scepticism on how the technology would work in practice. Participants were concerned about the security and processing of personal data as part of any age verification system. They considered the government was best placed to process their data to ensure data security and to ensure that the system worked in practice. The study identified the need for further communication and education to build knowledge and awareness in several areas. Two of these areas include, firstly, the effectiveness of age verification tools and, secondly, what makes a secure and privacy-preserving tool for ensuring online pornography remains accessible to adults only.

K.4.6 Recently polls have been conducted by Resolve[30] and YouGov[31] to garner public sentiment on the Online Safety Amendment (Social Media Minimum Age) Bill 2024. These polls showed high levels of support for the age restriction, such as 77% of respondents to the YouGov survey. However, the findings also showed doubts whether the age restriction will be efficacious.

K.4.7 In the UK, digital regulators have commissioned several studies into public perceptions of age assurance. One of these is Ofcom's 2022 research into adult user's attitudes to age verification on adult sites.[32] Through an online survey of 2158 adults following by focus groups, it was found that there is broad support for age verification measures to prevent under-18s from accessing online pornography. Also, participants were more likely to accept age verification measures where they expected those measure to be in place. Furthermore, using a credit card was the preferred means for proving age for paid access to pornography. The study also found serious concerns among participants about how user data may be processed and/or stored for the purposes of age verification, with a very low level of trust in the data privacy practices of adult sites. These privacy concerns could be addressed by increased transparency in data management practices, having a choice of methods to verify age and using an independent third-party for the age check rather than the porn sites themselves.

K.4.8 Ofcom commissioned a follow-up survey focused on trust in age assurance measures.[33] They sought to understand the experiences of people aged 16 years old and over accessing pornographic content online and passing any age checks, if encountered, through a survey of 5242 participants. An additional focus was their attitudes towards proving their age on adult sites and the importance of different factors in encouraging them to comply. One key finding was that, of those participants that had never been asked to prove their age to access pornographic content online before, 29% said they would comply with the age check and 55% said they would leave the site at the age check. Of those who choose not to prove their age to access pornographic content online:

- 86% had personal data concerns,
- 24% did not think the age check would be accurate and/or reliable.

K.4.9 Ofcom and the UK's Information Commissioner's Office (ICO) commissioned a joint study to explore parents' and children's attitudes towards potential age assurance methods.[34] The research used in-depth interviews followed by deliberative focus groups. There are several relevant key findings from this work. Firstly, most parents felt that services should have age assurance measures, but it can sit in tension with their desire for control and flexibility over what their children do online. Secondly, most children had circumvented current age assurance methods themselves (typically self-declaration on social media platforms) or knew someone who had. Thirdly, many families felt the type of platform the age assurance method was being used on was critical context for which method felt the most appropriate. Overall, however, parents and children felt that hard identifiers such as a passport or driving licence were the most effective age assurance method. Fourthly, both parents and children had concerns about the amount of effort required to use methods. Finally, some parents and children raised concerns about the amount of data sharing required.

K.5 Parental Consent and Parental Control Tools

K.5.1 Smirnova et. al. conducted a rapid evidence review of parental controls in everyday life.[35] The evidence reviewed as part of this research consisted of studying user experiences and perceptions of these technologies. They found that parents use controls to limit the time children spend online, filter content or restrict access to it, limit the people who can contact their child, switch off device functions and limit access to specific applications and/or websites. They also found that, to function effectively, such technical measures must address the needs of both children and parents. The evidence suggests that parental control measures that were developed based on identifying family values were perceived more positively by their users.

K.5.2 Stoilova et. al. conducted a follow up study using the same evidence base, focusing on analysing the context and outcomes of use of parental control tools.[36] As before, the evidence included consists of research studying user experience and perceptions of the tools. This review of the effectiveness of parental controls reveals mixed results: some uses of parental controls bring benefits, for example to children's safety, but others have no effect or limit children's opportunities and some have adverse results, for example to family communication.

K.5.3 In addition to the findings, these studies reveal the need for further functional and non-functional testing of the technical effectiveness of parental consent and parental control tools.

K.6 Children's Rights and Best Interests of the Child

K.6.1 While age assurance technologies are designed to protect children online, they may have a negative impact on children's rights if not implemented carefully. Over recent years, there has been growing awareness of the need to consider children's rights in the digital world.

K.6.2 The United Nations Convention on the Rights of the Child (CRC) was adopted in 1989.[37] It formally codifies children's rights, setting out the freedoms and protections all countries must offer children and young people under 18 years old. It is the basis upon which much domestic legislation in relation to children rests around the world. In 2021, the Council on the Rights of the Child adopted General Comment 25, which makes explicit that children's rights apply in the digital world and provides guidance on how to apply children's rights to the digital world.[38] General Comment 25 (GC25) sets out four principles to guide the implementation of all other rights under the Convention. These are summarised below:

A. **Non-discrimination.** All children should have equal and effective access to the digital environment in ways that are meaningful to them and States parties should take all measures necessary to overcome digital exclusion. States parties should take proactive measures to prevent discrimination, including on the basis of sex, disability, socioeconomic background, ethnic or national origin, language and discrimination against minority or Indigenous children. GC25 also explicitly calls for the prevention of discrimination against children deprived of liberty or in other vulnerable situations.

B. **Best interests of the child.** The best interests of the child is a dynamic concept that requires an assessment appropriate to the specific context. The digital environment was not originally designed for children, yet it plays a significant role in children's lives. In considering the best interests of the child, states parties should have regard for all children's rights, including the rights to seek, receive and impart information, to be protected from harm and to have their views given due weight and ensure transparency in the assessment of the best interests of the child.

C. **Right to life, survival and development.** Opportunities provided by the digital environment play an increasingly crucial role in children's development. Risks relating to content, contact, conduct and contract encompass, among many other things, violent and sexual content, cyberaggression and harassment, gambling, exploitation and abuse, including sexual exploitation and abuse and the promotion of or incitement to suicide and other life-threatening activities. States parties should identify and address the emerging risks that children face in diverse contexts, including by listening to their views on the nature of the risks that they face.

D. **Respect for the views of the child.** Children reported that the digital environment afforded them crucial opportunities for their voices to be heard in matters that affected them. The use of digital technologies can help to realize children's participation at the local, national and international levels. States parties should involve all children during the development of legislation or during the undertaking of other activities, which affect them. They should ensure that digital service providers actively engage with children, applying appropriate safeguards and give their views due consideration when developing products and services.

K.6.3 In addition to the above principles, GC25 highlights the importance of respecting the **evolving capacities of the child** as an enabling principle that addresses the process of their gradual acquisition of competencies, understanding and agency. This process has particular significance in the digital environment, where children are mor likely to be unsupervised.

K.6.4 On the adoption of GC25, the 5Rights Foundation, who acted as the Chair of the Steering Committee on General Comment 25, published a child-friendly version of the document.[39] This provides a summary of GC25 in accessible language, highlighting that the digital world must take children's ages into account when providing for their needs.

K.6.5 Livingstone, Nair, Stoilova, van der Hof & Caglar combined legal and social research methods to comprehensively examine the legal, technical and practical challenges of age assurance from the perspective of children's rights.[40] The authors find that current approaches vary in effectiveness and are often ineffective, with different approaches being taken in different sectors. They call for clear guidelines on the security, transparency and inclusiveness of age assurance methods with specific attention to those methods which utilise artificial intelligence. The authors advocate for a child rights-respecting approach to age assurance, emphasising the need for privacy-preserving approaches and consideration of children's evolving capacities.

K.6.6 In their analysis of age assurance in the lives of children and families, they find that little research has asked how age assurance is managed in the domestic context. Given the diversity of families, it is unlikely that age assurance will have uniform impacts in all domestic contexts. Where policymakers rely on parental management of children's digital activities, outcomes are likely to be iniquitous given parents' different resources, competencies, etc. However, there is little evidence exploring the use of age assurance across diverse family groups at present. Age assurance could ease the task parents face of raising children in a rapidly changing digital world. However, the authors argue that it is ultimately not clear whether age assurance can be designed in ways that respect children's rights holistically without stimulating new and creative workarounds.

K.6.7 Having said this, the authors go on to highlight that to safeguard children's rights in the digital environment, it is necessary to know when users are likely to be children, unless digital services are made appropriate for all ages by design. Age assurance may be necessary to safeguard children's rights, but age assurance tools themselves should be designed in a way that protects children's rights. They find that although age assurance remains controversial, there are strong grounds for age assurance as a norm, together with privacy-by-design and that it is plausible that age assurance could be designed in ways that respects children's rights.

K.6.8 The UK Council for Internet Safety (UKCIS) Digital resilience Working Group, chaired by Vicki Shotbolt and Dr Richard Graham, was established to develop and coordinate a digital resilience strategy aiming to enable the development of digital skills, emotional understanding and effective responses to online problems. The Working Group produced the Digital Resilience Framework and an online hub to support the dissemination, application and development of a resilience-based approach to online safety.[41] The framework suggests that supporting the development of digital resilience is an effective way to ensure children are safer online. Resilience adapts and grows through activation, in response to context, experience and learning. The authors stress that this does not mean children should simply be expected to cope with bad situations, which would lead to a toxic environment. Instead, children should be supported to understand when they are at risk online, know how to seek appropriate help, learn from their experience, adapt their future choices, and recover when things go wrong by receiving the appropriate level of support.

K.7 Effectiveness of Age Assurance

K.7.1 The US National Institute of Standards and Technology (NIST) Face Age Technology Evaluation (FATE) Age Estimation is the most prominent example of technical testing of age assurance systems.[42] It provides a comparison of the accuracy of a range of face age estimation systems, submitted by providers on a voluntary basis up to four times a year. It also describes the variance of accuracy of each system across different demographics / features, including gender and skin tone, to assess bias in performance. However, their evaluation focuses solely on testing the criteria of accuracy and bias, of one kind of age assurance: face age estimation. It also uses a fully automated testing approach which does not provide insight into real-world performance and the user experience. Another limitation is that the dataset used for testing consists of images from USA immigration visas, arrest mugshots, border crossings and immigration offices. These differ to images taken when users are browsing online services or physical retail stores.

K.7.2 In 2024, two significant theoretical evaluations — without any technical testing – were conducted on a range of theoretical approaches to age assurance. These evaluations did not assess the actual systems that are available on the market.

K.7.3 Sas and Mühlberg[43] reviewed 9 age assurance methods, including self-declaration, age declaration coupled with email confirmation, vouching, AI profiling, biometric analysis, capacity testing, hard identifiers, digital identities and proxies for official documentation. They also considered age proof transmission methods, including direct collection by online service providers, connection with a third-party account and variations of using age tokens. Age-token approaches included age tokens directly transmitted to service providers, the "double-blind" method, age tokens on a centralised digital wallet, age tokens on decentralised wallets, age tokens on the user's terminal and age tokens at browser-level. These were all assessed for the likelihood of occurrence of several risks of age assurance:

- User identification
- Loss of online anonymity
- Privacy intrusion
- Commercial profiling
- Victim targeting
- Identity theft
- Data fraud
- Restriction of user's autonomy
- Restriction of user's fundamental rights
- Exclusion and marginalisation
- Biases and inaccuracy
- Feasibility challenges
- Circumvention

K.7.4 The assessment was performed using interviews with researchers, civil society organisations, age assurance system providers and regulatory authorities. This was followed by desk research and analysis of relevant legal frameworks and age assurance literature.

K.7.5 The report highlights the potential privacy and inclusivity concerns of age assurance systems and the impacts of their deployment on user's fundamental rights. However, promising avenues are also identified, such as privacy-preserving techniques using double-blind transmission methods. The scope of this study did not include a technical evaluation of age assurance technologies available in the market today. Risks such as biases and inaccuracy, exclusion and marginalisation and feasibility challenges require a technical assessment of system in the market.

K.7.6 Shaffique and van der Hof also performed a theoretical evaluation of age assurance methods.[44] Using desk research and analysis, ten main methods of age assurance were assessed: (1) Self-declaration; (2) Hard identifiers; (3) Credit cards; (4) Self-sovereign identity; (5) Account holder confirmation; (6) Cross-platform authentication; (7) Facial age estimation; (8) Behavioural profiling; (9) Capacity-testing; and (10) Third-party age assurance service. Ten key requirements of age assurance systems were also defined and explored: proportionality, privacy, security, accuracy, functionality, inclusivity, participation, transparency, notification mechanisms and considering the child's perspective. The study found that age assurance is a complex matter, including that different age assurance methods have different strengths and weaknesses. For example, there is sometimes a tension between the level of assurance in the user's age and the level of privacy, where methods that may offer a higher level of assurance may require further personal data from the user. Another factor is that some methods may be easy to use, but that may also make them easy to circumvent. It is, therefore, difficult to determine the right approach to age assurance for any given situation. As with the previous report, this study also does not include any technical testing. Therefore, some requirements considered in this study require further investigation through technical testing of systems in the market to provide robust research evidence. Some of the relevant requirements include accuracy, inclusivity, functionality and participation.

K.7.7 Another prominent assessment of age assurance technologies is Enex TestLab's 2022 evaluation commissioned by the eSafety Commissioner.[45] It is notable for including technical testing of two age assurance systems, alongside theoretical evaluation of these and several other systems. The sample size used for the technical testing was 15 participants, using publicly available demo versions of age assurance technologies, which may not be as effective as production versions. These limitations may impact confidence in some findings from the study.

K.7.8 In the UK, Ofcom's draft guidance (due to be updated in January 2025) for services providers publishing pornographic content[46] defines four key technical criteria and two principles for effective age assurance. Alongside the criteria, they provide a theoretical evaluation of age assurance systems that justify them.

K.7.9 The technical criteria are:

- **Technical Accuracy:** how an age assurance method can correctly determine the age of a user under test lab conditions.
- **Robustness:** the degree to which an age assurance method can correctly determine the age of a user in unexpected or real-world conditions.
- **Reliability:** the degree to which the age output from an age assurance method is reproducible and derived from trustworthy evidence.
- **Fairness:** the extent to which an age assurance method avoids or minimises bias and discriminatory outcomes.

K.7.10 The principles are:

- **Accessibility:** this covers the principles that the age assurance should (a) be easy to use and (b) work effectively for all
- **Interoperability:** re-using the result of an age check across multiple services allowing different providers of age assurance methods to share this information in line with data privacy laws.

K.7.11 These criteria and principles align with characteristics, criteria and requirements discussed elsewhere in the literature. The draft guidance specifically raises the lack of evidence of the effectiveness of age assurance systems in practice (whether deployed in lab environments or production environments).

K.7.12 Two important studies address the measurements of age assurance systems. The UK Information Commissioner's Office (ICO) commissioned part 1 of a study into the criteria and metrics required to assess the effectiveness of age assurance techniques and to understand the potential for consistency, comparability and standardisation of measurement.[47] Key metrics were defined and classified by the type of age assurance output produced; either continuous where the output is the age computed by the system or binary where the output is either 'yes' or 'no' indicating that the age meets a threshold or not.
For continuous approaches, metrics include:

- **Mean Absolute Error (MAE):** The central value of the absolute errors (i.e. difference between output age and real age, ignoring whether it is higher or lower) of the sample.
- **Standard Deviation (SD):** The amount of variation or spread over the distribution of absolute errors in the sample.

K.7.13 For binary approaches, the metrics include:

- **True Positive Rate (TPR):** the sensitivity of the technology's ability to correctly detect people who are over the age threshold.
- **False Positive Rate (FPR):** the technology's probability of false alarm (i.e., incorrectly identifying someone as being over the age threshold).
- **Positive Predictive Value (PPV):** the proportion of the sample correctly identified as being over the age threshold given that they have been predicted as being over the age threshold.

K.7.14 The ICO study did not cover measurement of the overall effectiveness of age assurance systems. It instead focused primarily on the criterion of accuracy, while also describing some considerations for inclusion, security and privacy.

K.7.15 Follow-up research was commissioned by Ofcom and the ICO to further explore the measurement of accuracy levels achievable by different age assurance systems.[48] The research provided self-reported accuracy levels for a range of age assurance technologies from providers that participated in the study. The study also proposed the expression of a single 'headline' accuracy metric for all age assurance systems, which should be accompanied by further specific metrics including MAE, TPR, FPR, etc. Future work was identified to establish ranges of accuracy by performing technical assessment of age assurance systems. This research also has certain limitations, including:

- As companies' accuracy figures were self-declared, the study's hypothetical indicators of confidence should be considered illustrative.
- Technical accuracy is only one dimension of age assurance systems and the report does not cover other aspects of the overall effectiveness of these technologies.
- Difficulties in acquiring adequate, independent data sets for testing age assurance technologies pose an additional challenge for measuring technical accuracy.

K.8 The eSafety Commissioner's Call for Evidence Responses, Consultation and Cross-Sector Workshops

K.8.1 As part of its work to inform the Age Verification Roadmap, published in 2023, the Australian eSafety Commissioner conducted a call for evidence, two rounds of stakeholder consultations and several cross-sector workshops. This work was undertaken specifically to support the development of the Roadmap and was not intended for broader application.[49]

K.8.2 According to these pieces of eSafety research, more than three in four Australian adults support government implementation of age assurance for online pornography. However, there are concerns about effectiveness, privacy and security. These themes – and concerns about accessibility, fairness and bias – were echoed by young people and multi-sector stakeholders.[50]

K.8.3 These considerations informed the development of assessment criteria which an independent test lab applied to review age assurance technologies available on the market, including biometric (age and voice) estimation and identity document (ID)-based tools. They also reviewed a recent European age assurance pilot and international standards for age assurance.

K.8.4 The independent assessment found the age assurance market is immature but developing. Each technology has benefits and trade-offs. For example, ID-based solutions can provide a high level of certainty but risk excluding those without access to ID, whereas facial estimation technology is promising but may offer a lower level of certainty, and may vary in accuracy based on skin tone, gender and physical differences. Consumer choice to select the option users are comfortable with, and which works for them, is a key lesson from the European pilot.

K.8.5 For these and other reasons explored in these pieces of research, age assurance technologies should be trialled in Australia, based on lessons from pilots conducted elsewhere, before being mandated. While eSafety should be involved in the development, implementation and evaluation of any such pilot, they did not at the time have the resources, capabilities, or expertise to lead its delivery.

K.9 Australia Signals Directorate (ASD): The Information Security Manual (ISM)

K.9.1 The Australian Signals Directorate (ASD) produces the Information Security Manual (ISM)[51]. The ISM is a cyber security framework that an organisation can apply, using their risk management framework, to protect their information technology and operational technology systems, applications and data from cyber threats.

It is a set of guidelines published by the Australian Cyber Security Centre (ACSC) to help organisations protect their information and systems from cyber threats. It is primarily targeted at Australian government agencies and the software systems they operate and/or procure from suppliers.

K.9.2 The ISM draws from National Institute of Standards and Technology (NIST) Special Publication (SP) 800-37 Rev. 2, Risk Management Framework for Information Systems and Organizations: A System Life Cycle Approach for Security and Privacy[52]. Broadly, the risk management framework used by the ISM has six steps: define the system, select controls, implement controls, assess controls, authorise the system and monitor the system.

K.9.3 The manual also defines several Cyber Security Principles, followed by several Cyber Security Guidelines, with the latter subdivided to target specific organisational roles, processes or infrastructure elements. These subdivisions contain guidance and recommended controls to implement the cyber security principles.

K.10 Australia's Digital ID System

K.10.1 Australia's Digital ID System[53] is relevant to age assurance systems, as a digital identity may be able to prove an individual's age. Although an individual's age is an attribute of their identity, it is not necessarily the case that establishing the full identity of an individual in a global context is needed to gain age assurance.[54] In many cases, establishing an individual's age should not establish their full identity. As such, while the process of age assurance may in some instances be connected to identity verification, it can also be performed in ways other than via identity verification. The approach to assessment of age assurance systems can, therefore, be informed by existing approaches to the assessment of digital identity systems, such as that specified in Australia's Digital ID system.

K.10.2 This system is made up of two parts: (a) the voluntary accreditation scheme for digital ID service providers and (b) the Australian Government Digital ID System (AGDIS).

K.10.3 The voluntary accreditation scheme is open to all government and private sector digital ID service providers across the economy. Accreditation demonstrates that a provider meets strict rules and standards for:

- Privacy protection
- Security
- Usability
- Accessibility
- Risk management
- Fraud control and more.

K.10.4 These services are also subject to additional privacy safeguards. These are set out in the Digital ID Act 2024, with civil penalties for non-compliance. Accreditation is only mandatory if a provider wants to join the AGDIS.

K.10.5 Accredited providers can display a Trustmark. This shows they have met the accreditation requirements in the Digital ID Act 2024 (and associated legislative instruments) and are subject to oversight by the Digital ID Regulator for their accredited service. This can in-turn indicate that the accredited provider is a secure and trustworthy provider of digital ID services.

K.10.6 The Digital ID Regulator has been responsible for the Accreditation Scheme and oversight of the AGDIS since 30 November 2024.

K.10.7 The AGDIS is designed to provide a secure, convenient and voluntary way for people to verify who they are online. The system currently supports this for a range of Commonwealth and state and territory government services. The AGDIS is delivered and supported by the following agencies and functions:

- Department of Finance (as the lead policy agency for digital ID).
- Australian Competition and Consumer Commission (as the Digital ID Regulator).
- Services Australia (as the Office of the System Administrator, and separately the operator of the accredited identity exchange in the AGDIS).
- Office of the Australian Information Commissioner (as the regulator of the privacy aspects of the Digital ID Act 2024).
- Department of the Treasury (as the agency housing the independent Data Standards Chair that develops standards for the AGDIS).
- Australian Taxation Office (as the operator of myID and the Relationship Authorisation Manager (RAM), which are accredited services in the AGDIS).

K.10.8 The AGDIS allows people to use digital ID with government services to verify their identity and/or authenticate into the service. It also (via RAM) allows people to verify their authority to act on behalf of businesses in certain government service contexts. By December 2026 private businesses will be able to apply to join the Australian Government Digital ID System.

K.10.9 The eSafety Commissioner stated[55] that before the use of specific age assurance technologies is prescribed, stakeholders reported to them that measures need to be in place to alleviate concerns about privacy and security and also satisfy the implementation factors raised above. These include the need for independent oversight, strong governance, transparency, trustworthiness, fairness and respect for human rights. To promote international harmonisation, this work should be aligned with relevant international standards which are in place or under development.

K.10.10 There is substantial work already well underway to develop such a framework for Australia's Digital Identity System. The Australian Government should build on this work to establish a similar regulatory accreditation regime to the Digital ID Accreditation Scheme.

K.10.11 Establishment of such a regulatory scheme should include consideration of a strong, independent regulator or accreditation body with functions including:

- Accreditation
- Compliance and enforcement related to accreditation-enabling capabilities, such as:
    - Register of accredited providers
    - Application portals for prospective providers
    - Any enabling IT infrastructure for the regulatory regime
- General regulatory functions – reporting, publication of guidance, etc.

K.10.12 Based on the eSafety Commissioner's consultation across government, at this stage, there is likely no existing regulator or accreditation body that has the full breadth of experience and capability to provide all the necessary functions, particularly in relation to this type of digital accreditation. However, building on the work of equivalent accreditation regimes in government such as the Digital ID Accreditation Scheme could provide a good basis for starting discovery work on how an accreditation scheme could operate.

K.10.13 In addition to this, further criteria may be required specifically for the accreditation of age assurance systems. This is because the wide array of age assurance systems works in various ways, relying on either a verified date of birth, the analysis of an individual's biological or behavioural features that vary with age or verified information which indirectly implies than an individual is over or under a certain age. This is distinct from digital identity, where only the former option is relevant (i.e. reliance on a verified date of birth). The following additional criteria, as per the literature review and DITRDCSA's guidance, are also needed:

- Accuracy (how well the technology can detect a user's age)
- Interoperability (how well the technology can be used across multiple online platforms)
- Reliability (how consistently the technology can produce the same result)
- Minimisation of bias (how well the technology avoids racial or other bias)
- Human rights protections (i.e. accessibility for all users, including people with disability, as well as applicable rights under the *UN Convention on the Rights of the Child*)

K.10.14 Therefore, digital ID systems accredited under the current voluntary accreditation scheme established by the Digital ID Act 2024. This is an area for further exploration with the agencies responsible for Australia's Digital ID system.

K.11 References

1. National Retail Association, "National Sale of Knife Laws | Comparison Table", Available: https://www.nationalretail.org.au/app/uploads/2024/06/National-Knife-Laws-Comparison-Table-v2.pdf
2. Department of Health and Aged Care, Australian Government., "Smoking and tobacco laws in Australia", Available: https://www.health.gov.au/topics/smoking-vaping-and-tobacco/about-smoking/laws-in-australia
3. Department of Health and Aged Care, Australian Government, "New laws for vapes", Available: https://www.health.gov.au/vaping/new-laws
4. Australian Government, "Public Health (Tobacco and Other Products) Act 2023", Available: https://www.legislation.gov.au/C2023A00118/latest/text
5. Department of Health and Aged Care, Australian Government, "Alcohol Laws in Australia", Available: https://www.health.gov.au/topics/alcohol/about-alcohol/alcohol-laws-in-australia
6. Alcohol and Drug Foundation, "Providing alcohol to under 18s", https://adf.org.au/insights/understanding-secondary-supply/
7. State of Queensland. Supplying alcohol to under 18s 2022
8. Government of New South Wales. Alcohol and Young People
9. Attorney-General's Department. Information for parents of minors 2023
10. Department of Police Fire and Emergency Management. Youth and Alcohol 2022
11. State Government of Victoria. Minors and alcohol 2023
12. Alcohol Think Again. Alcohol laws for under 18s 2022
13. ACT Policing, "Alcohol – Supply of alcohol to minors", https://police.act.gov.au/community-safety/alcohol-and-drugs/alcohol

14. Northern Territory Government. Young people, alcohol and drugs 2016
15. Victoria State Government, "Gambling Regulation Act 2003", Available: https://www.legislation.vic.gov.au/in-force/acts/gambling-regulation-act-2003/107
16. Gamblinglaws.org, "Gambling Laws in Australia 2024", Available: https://www.gamblinglaws.org/au/
17. Australian Government, "Guidelines for the Classification of Films 2012", Available: https://www.legislation.gov.au/F2012L02541/asmade/text
18. Australian Classification Board, "What are the ratings?", Available: https://www.classification.gov.au/classification-ratings/what-are-ratings
19. Australian Government, "Online Safety Act 2021", Available: https://www.legislation.gov.au/C2021A00076/latest/text
20. The eSafety Commissioner, "Schedule 1 – Social Media Services Online Safety Code (Class 1A and Class 1B Material)", 2023, Available: https://www.esafety.gov.au/sites/default/files/2023-06/Schedule-1%E2%80%93Social-Media-Services-Online-Safety-Code-%28Class-1A-and-Class-1B-Material%29.pdf?v=1747795437922
21. "Draft Phase Two Codes - Consolidated Industry Codes of Practice for the Online Industry (Class 1C and 2 Material)", October 2024, Available: https://onlinesafety.org.au/phase-two-codes/
22. The eSafety Commissioner, "Development of Phase 2 Industry Codes under the Online Safety Act – eSafety position paper", July 2024, Available: https://www.esafety.gov.au/sites/default/files/2024-07/Development-of-Phase-2-Industry-Codes-under-the-Online-Safety-Act-eSafety-position-paper_0.pdf
23. The eSafety Commissioner, "Industry codes and standards," Available: https://www.esafety.gov.au/industry/codes

24. The eSafety Commissioner, "Roadmap for age verification and complementary measures to prevent and mitigate harms to children from online pornography", 2023, Available: https://www.esafety.gov.au/sites/default/files/2023-08/Roadmap-for-age-verification_2.pdf

25. The eSafety Commissioner, "Development of Phase 2 Industry Codes under the Online Safety Act – eSafety position paper", July 2024, Available: https://www.esafety.gov.au/sites/default/files/2024-07/Development-of-Phase-2-Industry-Codes-under-the-Online-Safety-Act-eSafety-position-paper_0.pdf

26. J. Humphry, O. Boichak and J. Hutchinson, "Emerging Online Safety Issues – Co-creating Social Media with Young People – Research Report," The University of Sydney, Sydney, 2023.

27. Family Online Safety Institute (FOSI), "Making Sense of Age Assurance: Enabling Safer Online Experiences", 2022, Available: https://fosi.org/research/making-sense-of-age-assurance-enabling-safer-online-experiences/

28. The eSafety Commissioner, "Questions, doubts and hopes. Young people's attitudes towards age assurance and the age-based restriction of access to online pornography", 2023, Available: https://www.esafety.gov.au/sites/default/files/2023-08/Questions-Doubts-and-Hopes.pdf

29. The eSafety Commissioner, "Public perceptions of age verification for limiting access to pornography", 2021, Available: https://www.esafety.gov.au/research/public-perceptions-age-verification-for-limiting-access-pornography

30. The Sydney Morning Herald, "Australians like banning teens from social media", 2024, Available: https://www.smh.com.au/politics/federal/australians-like-banning-teens-from-social-media-they-just-don-t-think-it-ll-work-20241210-p5kx9l.html

31. YouGov, "Support for under-16 social media ban soars to 77% among Australians", 2024, Available: https://au.yougov.com/politics/articles/51000-support-for-under-16-social-media-ban-soars-to-77-among-australians

32. Ofcom, "Adult Users' Attitudes to Age Verification on Adult Sites", 2022, Available: https://www.ofcom.org.uk/siteassets/resources/documents/research-and-data/online-research/vsp/attitudes-to-age-verification/2022-adult-attitudes-to-age-verification-adult-sites.pdf
33. Ofcom, "Barriers to Proving Age on Adult Sites", 2023, Available: https://www.ofcom.org.uk/online-safety/protecting-children/barriers-to-proving-age-on-adult-sites/
34. Ofcom and The ICO, "Families' attitudes towards age assurance", 2022, Available: https://www.gov.uk/government/publications/families-attitudes-towards-age-assurance-research-commissioned-by-the-ico-and-ofcom
35. S. Smirnova, S. Livingstone and M. Stoilova, "Understanding of user needs and problems: a rapid evidence review of age assurance and parental controls", 2021, Available: https://eprints.lse.ac.uk/112559/
36. M. Stoilova, M. Bulger and S. Livingstone, "Do parental control tools fulfil family expectations for child protection? A rapid evidence review of the contexts and outcomes of use", 2023, Available: https://doi.org/10.1080/17482798.2023.2265512
37. UN General Assembly, "Convention on the Rights of the Child," 1989, Available: https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-rights-child
38. UN Committee on the Rights of the Child, "General comment No. 25 (2021) on children's rights in relation to the digital environment," CRC/C/GC/25, 2021. Available: https://digitallibrary.un.org/record/3906061/files/CRC_C_GC_25-EN.pdf
39. 5Rights Foundation, "In our own words: Young people's version of General Comment No. 25 on children's rights in relation to the digital environment," 2021. Available: https://5rightsfoundation.com/wp-content/uploads/2024/09/In-our-own-words-young-peoples-version-of-GC25.pdf?utm

40. S. Livingstone, A. Nair, M. Stoilova, S. van der Hof and C. Caglar, "Children's rights and online age assurance systems: The way forward," The International Journal of Children's Rights, vol. 32, no. 3, pp. 721–747, 2024. Available: https://doi.org/10.1163/15718182-32030001
41. UK Council for Internet Safety,"Digital Resilience Framework," 2019. Available: https://www.gov.uk/government/publications/digital-resilience-framework
42. National Institute of Standards and Technology, "Face Analysis Technology Evaluation (FATE) Age Estimation & Verification", Available: https://pages.nist.gov/frvt/html/frvt_age_estimation.html
43. M. Sas and J. T. Mühlberg, "Trustworthy Age Assurance?" The Greens Cluster: Social & Economy. In The European Parliament., 2024.
44. M. R. Shaffique and S. van der Hof, "Research report: Mapping age assurance typologies and requirements," Directorate-General for Communications Networks, Content and Technology, Better Internet for Kids (BIK), European Commission, 2024.
45. The eSafety Commissioner, "Appendix 8: Independent assessment of age assurance and safety technologies, Roadmap for age verification – background report", 2023, Available: https://www.esafety.gov.au/sites/default/files/2023-08/Appendices-to-background-report.pdf
46. Ofcom, "Guidance for service providers publishing pornographic content – Consultation on draft guidance on age assurance and other Part 5 duties", 2023, Available: https://www.ofcom.org.uk/siteassets/resources/documents/consultations/category-1-10-weeks/272586-consultation-guidance-for-service-providers-publishing-pornographic-content/associated-documents/consultation-guidance-for-service-providers-publishing-pornographic-content-online?v=393628

47. The UK Information Commissioner's Office (ICO), "Measurement of Age Assurance Technologies", 2022, Available: https://cy.ico.org.uk/media2/migrated/4021822/measurement-of-age-assurance-technologies.pdf
48. ICO and Ofcom, "Measurement of Age Assurance Technologies Part 2 – Current and short-term capability of a range of Age Assurance measures", 2023, Available: https://www.drcf.org.uk/publications/papers/measurement-of-age-assurance-technologies
49. The eSafety Commissioner, "Appendix 2: Call for evidence request and thematic summary of submissions, Roadmap for age verification – background report", 2023, Available: https://www.esafety.gov.au/sites/default/files/2023-08/Appendices-to-background-report.pdf?v=1733502339463
50. The eSafety Commissioner, "Appendix 5: Consultation Summaries, Roadmap for age verification – background report", 2023, Available: https://www.esafety.gov.au/sites/default/files/2023-08/Appendices-to-background-report.pdf?v=1733502339463
51. Australia Signals Directorate (ISM), "The Information Security Manual (ISM)", Available: https://www.cyber.gov.au/resources-business-and-government/essential-cyber-security/ism
52. National Institute of Standards and Technology (NIST), "NIST SP 800-37 Rev. 2 Risk Management Framework for Information Systems and Organizations: A System Life Cycle Approach for Security and Privacy", 2018, Available: https://csrc.nist.gov/pubs/sp/800/37/r2/final
53. Australian Government, "Australia's Digital ID System," Available: https://www.digitalidsystem.gov.au/
54. ISO/IEC FDIS 27566-1 Introductory Text
55. The eSafety Commissioner, "Roadmap for age verification and complementary measures to prevent and mitigate harms to children from online pornography", 2023, Available: https://www.esafety.gov.au/sites/default/files/2023-08/Roadmap-for-age-verification_2.pdf

Age Assurance Technology Trial

PART K
Media Coverage

K.12 Media Coverage

| May 2024

K.12.1. "An expert warns age verification for porn 'doesn't work"

Published: 1 May 2024 – SBS News

This piece features expert opinions questioning the efficacy of age verification systems for online pornography, suggesting that such measures may be easily circumvented and raise privacy concerns.

"The government has said it would move ahead with an age verification trial online to limit access to graphic material such as pornography to prevent access for children."

https://www.sbs.com.au/news/article/an-expert-warns-age-verification-for-porn-doesnt-work/nt3qltrwi

K.12.2 "Age verification trial 'likely to fail', cyber expert says"

Published: 1 May 2024 – ABC Radio National

Cybersecurity expert Vanessa Teague expressed scepticism about the effectiveness of the government's age verification trial, highlighting potential privacy concerns and technical challenges.

"If you want to do age verification, you need to do it in a way that doesn't create a privacy nightmare."

https://www.abc.net.au/listen/programs/radionational-breakfast/age-verification-trial-likely-to-fail-cyber-expert-says/103793592

K.12.3 "How age verification rules for porn and social media could impact millions of Australians"

Published: 19 May 2024 – ABC News

This article discusses the broader implications of proposed age verification laws, noting that while aimed at protecting children, such measures could affect all Australians by requiring age proof for accessing various online services.

"Millions of Australians could be pressed to hand over their data in exchange for access to social media, online porn or gaming, under an age verification scheme."

https://www.abc.net.au/news/2024-05-19/age-verification-internet-use-children-online-pornography/103843886

K.12.4 "Australia's New Online Age Verification Trial"

Published: 27 May 2024 – ABC Behind the News

This educational segment explains Australia's new online age verification trial in a format accessible to younger audiences. It outlines the reasons behind the trial and the technologies being tested to ensure safer online experiences for children.

"The Australian Government is trialling technology designed to check people's age before they're allowed to access some online platforms, including gambling sites, adult games and entertainment, and maybe even some social media."

https://www.abc.net.au/btn/classroom/age-verification-trial/103899894

K.12.5 "Age assurance trial will not require social media companies to participate"

Published: 30 May 2024 – ABC News

This article discusses the government's $6.5 million age assurance pilot, noting that social media platforms are not required to participate in the initial phase. The trial aims to assess existing technologies to inform future online safety policies.

"The trial aims to test technologies that can estimate or verify someone's age to help decide whether they should be allowed to access age-restricted online services."

https://www.abc.net.au/news/2024-05-30/age-assurance-trial-wont-require-social-media-companies/103913192

K.12.6 "Age verification trial tests to be outsourced"

Published: 31 May 2024 – InnovationAus

This article revealed that Australia's age verification testing would be managed independently of the platforms involved, with technical testing outsourced to an external expert.

"A trial of age verification technologies will be managed by the Department of Communications, but technical effectiveness tests will be done by a third-party expert selected through a competitive process."

https://www.innovationaus.com/age-verification-trial-tests-to-be-outsourced/

| July 2024

K.12.7. "Meta, TikTok to be asked to join $6.5m age assurance trial to block kids from porn, violence"

Published: July 2024 – The Courier-Mail

This article reports on the Australian government's invitation to major social media platforms, including Meta and TikTok, to participate in a $6.5 million age assurance trial. The trial aims to prevent minors from accessing harmful online content.

"Social media giants Meta and TikTok will be asked to join a $6.5 million age assurance trial to block kids from porn and violence."

https://www.couriermail.com.au/technology/online/social-media-giants-to-be-asked-to-join-65m-age-assurance-trial-to-block-kids-from-porn-violence/news-story/52542e3decee65cea8e645ece82b2e54

K.12.8 "Age verification trial to crackdown on kids using social media"

Published: July 2024 – 9News

This news segment covers the federal government's new age verification trial aimed at preventing children from using social media platforms. It includes coverage of technologies being tested and the potential impact on online safety.

"The federal government is cracking down on kids using social media, with a new age verification trial set to begin."

https://www.youtube.com/watch?v=v7BQSf-_Hbk

| August 2024

K.12.9 "Has age verification trial made any difference for our kids?"

Published: August 2024 – The Courier-Mail

This editorial questions the real-world impact of the ongoing age verification trial, noting that children still seem to be accessing inappropriate content despite the government's efforts.

"Months after an age verification trial began, children are still accessing inappropriate material online."

https://www.couriermail.com.au/news/opinion/editorial-act-now-to-save-kids-from-social-media/news-story/8182c25dd8a54294eba564f19a55ccf3

| September 2024

K.12.10 "Anthony Albanese makes major call on 'age verification technologies' for social media"

Published: 9 September 2024 – 7NEWS

Prime Minister Anthony Albanese announced plans to introduce legislation enforcing a minimum age for social media access, aiming to protect young people from online harms.

"Social media use by young people is in the spotlight after numerous instances of children being affected by suicide, sextortion, exposure to violence, pornography, drugs, and other harmful content."

https://7news.com.au/sunrise/prime-minister-anthony-albanese-makes-major-call-on-age-verification-technologies-for-social-media-c-16002509

| November 2024

K.12.11 "Australia to ban under-16s from social media – but can't say how TikTok, Instagram and others will enforce it"

Published: 7 November 2024 – The Guardian

This article explores the Australian government's plan to legislate a ban on social media for users under 16, highlighting the absence of a clear enforcement mechanism and uncertainty about the role of platforms.

"The Australian government has pledged to legislate an age limit of 16 years for social media access, with penalties for online platforms that do not comply."

https://www.theguardian.com/australia-news/2024/nov/07/australian-government-to-legislate-social-media-age-limit-of-16-but-cant-say-how-platforms-will-enforce-it

K.12.12 "Australia should delay social media ban until age-check trial finishes, Google and Meta say"

Published: 25 November 2024 – The Guardian

Tech companies including Google and Meta urged the Australian government to hold off implementing its under-16 ban until the Age Assurance Technology Trial concludes and standards are agreed.

"Google and Meta have called on the Australian government to delay the introduction of a social media ban for children under 16 until a trial of age verification technologies is complete."

https://www.theguardian.com/australia-news/2024/nov/26/australia-should-delay-social-media-ban-until-age-check-trial-finishes-google-and-meta-say

K.12.13 "Tender awarded for age assurance trial"

Published: 15 November 2024 – Department of Infrastructure

The Australian Government formally announced that the Age Check Certification Scheme (ACCS) would manage the trial and oversee the testing of various age assurance tools.

"A consortium headed by the world-leading Age Check Certification Scheme (ACCS) has been awarded the tender for the Australian Government's age assurance trial."

https://www.infrastructure.gov.au/department/media/publications/tender-awarded-age-assurance-trial

K.12.14. "Social media ban Australia: How will the age verification work?"

Published: 18 November 2024 – 9News

This article examines the challenges and unanswered questions surrounding the implementation of a social media age ban, including the effectiveness of age verification technologies.

"One of the biggest outstanding questions is how social media companies will check who is over 16 years old."

https://www.9news.com.au/national/social-media-ban-australia-questions-that-still-need-to-be-answered/1436a0e0-facc-47cd-9d46-14d87ebd4b9e

K.12.15 "Labor's social media age assurance trial kicked into next year"

Published: November 2024 – The Courier-Mail

This article discusses delays in the government's age assurance trial, originally expected to begin mid-year. The delay raised concerns about the urgency of protecting minors online and implementing effective safeguards.

"A technology trial to ensure social media companies can enforce an age limit is yet to begin more than six months after Labor announced funding."

https://www.couriermail.com.au/news/national/labors-social-media-age-assurance-trial-kicked-into-next-year/news-story/f7041b7f9efb5c8c61a49379dcf4dc96

K.12.16 "Australia passes world-first law banning under-16s from social media despite safety concerns"

Published: 28 November 2024 – The Guardian

Australia passed landmark legislation to ban children under 16 from social media platforms. The move was hailed as bold by supporters but raised concerns about practicality and unintended consequences.

"Australia's parliament has passed a law that will aim to do what no other government has, and many parents have tried to: stop children from using social media."

https://www.theguardian.com/media/2024/nov/28/australia-passes-world-first-law-banning-under-16s-from-social-media-despite-safety-concerns

| December 2024

K.12.17 "As Australia bans social media for kids under 16, age-assurance tech is in the spotlight"

Published: 7 December 2024 – TechCrunch

This piece discusses how Australia's new social media laws have placed age assurance technologies under scrutiny. It outlines the international interest and what solutions may be tested.

"Australia will try out age-assurance technologies next year to help regulators set some of the key parameters."

https://techcrunch.com/2024/12/07/as-australia-bans-social-media-for-kids-under-16-age-assurance-tech-is-in-the-spotlight/

K.12.18 "Age check and social media ban laws"

Published: 19 December 2024 – The Guardian

This piece covers the government's decision to extend the deadline for tech companies to implement controls blocking access to adult content and underage social media use.

"Tech companies will have two extra months to finalise plans to restrict children from accessing adult websites, as Australia's rushed under-16s social media ban legislation forces the sector to grapple with potential crossover issues."

https://www.theguardian.com/technology/2024/dec/19/deadline-changed-as-tech-firms-grapple-with-australias-age-check-and-social-media-ban-laws

K.12.19 "Yoti announces participation in the Australian Age Assurance Trial"

Published: December 2024 – Yoti

Digital identity provider Yoti confirmed its participation in the Australian Government's Age Assurance Technology Trial. The company offered its facial age estimation and other age assurance solutions.

"We're pleased to have the opportunity to participate in the Age Assurance Technology Trial and look forward to taking part."

https://www.yoti.com/blog/yoti-participation-australia-age-assurance-trial/

| February 2025

K.12.20 "Test lab, bias considerations for Australia age assurance trial revealed"

Published: 26 February 2025 – Biometric Update

Melbourne consultancy KJR was announced as the testing partner for the Age Assurance Technology Trial. The article discusses the importance of ensuring biometric tools work effectively across Australia's diverse population.

"One of the early challenges identified is in ensuring biometric age estimation and other technologies work as well for Australia's First Nations people as they do for everyone else."

https://www.biometricupdate.com/202502/test-lab-bias-considerations-for-australia-age-assurance-trial-revealed

| March 2025

K.12.21 "Incode Joins Australia's Age Assurance Technology Trial to Protect Children Online"

Published: March 2025 – KBI Media

Incode highlighted its biometric selfie-based age estimation tool as fast, accurate, and privacy-respecting. The company joined the Australian trial to demonstrate how its tech could help enforce age restrictions.

"Incode's technology estimates a user's age in mere seconds, achieving an industry leading 99.87% true positive rate without storing any personal information."

https://kbi.media/press-release/incode-joins-australias-age-assurance-technology-trial-to-protect-children-online/

K.12.22 "Australia to test age verification tech for social media ban"

Published: 20 March 2025 – SecurityBrief Australia

Incode Technologies joined the trial, providing a selfie-based biometric tool with a claimed 99.87% accuracy. The article outlines how the technology works and the company's privacy-first approach.

"Incode Technologies has announced its participation in a trial initiated by the Australian government to evaluate technologies to prevent minors from accessing social media platforms."

https://securitybrief.com.au/story/australia-to-test-age-verification-tech-for-social-media-ban

K.12.23 "Age Assurance Technology Trial solidifies list of participants, adds Google"

Published: 27 March 2025 – Biometric Update

This update confirms additional participants in the trial, including Google, and outlines the evaluation process, which tests solutions in realistic use conditions.

"These tests provide a real-world environment, where users will have a variety of equipment, light conditions and access to required resources."

https://www.biometricupdate.com/202503/age-assurance-technology-trial-solidifies-list-of-participants-adds-google

| April 2025

K.12.24 "Australia's social media ban is attracting global praise"

Published: 5 April 2025 – The Guardian

This article examines the international reception to Australia's age restrictions, describing support from child protection groups and concern from digital rights advocates.

"A trial is under way but the government faces many hurdles – including whether Trump-emboldened tech companies will comply."

https://www.theguardian.com/technology/2025/apr/05/australia-social-media-ban-trial-global-response-implementation

K.12.25 "ShareRing joins Australian Government trial for age verification"

Published: 14 April 2025 – ChannelLife Australia

Australian blockchain company ShareRing announced its participation in the trial, offering a decentralised, privacy-preserving age verification solution.

"Melbourne-based ShareRing has announced its participation in the Australian Government's age assurance and verification technology trial."

https://channellife.com.au/story/sharering-joins-australian-government-trial-for-age-verification

K.12.26 "Discord is verifying some users' age with ID and facial scans"

Published: 17 April 2025 – The Verge

Discord introduced an age verification feature requiring some users in Australia and the UK to provide facial scans or ID uploads to access sensitive content, aligning with evolving international age assurance expectations.

"Discord is preventing some users from accessing sensitive content unless they allow the platform to verify their age by scanning their face or ID."

https://www.theverge.com/news/650493/discord-age-verification-face-id-scan-experiment

K.12.27 "Australia Tests Blockchain Age Verification for Social Media Access"

Published: April 2025 – IDTechWire

This article covers ShareRing's use of blockchain to support privacy-preserving age verification for social media access as part of the national trial.

"Australian blockchain company ShareRing has joined a government-led trial to test age verification technology for social media platforms."

https://idtechwire.com/australia-tests-blockchain-age-verification-for-social-media-access/

K.12.28 "Australia Launches Blockchain-Based Age Verification Trial for Social Media"

Published: April 2025 – Mobile ID World

The government formally launched testing of blockchain age verification solutions through ShareRing and others, exploring decentralised identity as a key compliance tool.

"The Australian government has launched a trial of blockchain technology for age verification on social media platforms, marking its latest effort to protect children online."

https://mobileidworld.com/australia-launches-blockchain-based-age-verification-trial-for-social-media/

| May 2025

K.12.29 "Age assurance from Big Tech potential non-factor in Australian trial"

Published: 8 May 2025 – Biometric Update

This article notes that many global tech platforms have not formally joined the Age Assurance Technology Trial, raising doubts about their willingness to adopt national compliance solutions.

"The limited participation of Big Tech companies in the trial raises questions about their commitment to implementing effective age assurance measures."

https://www.biometricupdate.com/202505/age-assurance-from-big-tech-potential-non-factor-in-australian-trial

K.12.30 "Google age ID proposal may not suit Australia's under-16 social media ban, expert says"

Published: 8 May 2025 – The Guardian

Google's suggested age ID solution using its Wallet app may be impractical for teenagers, according to experts. The article suggests such a system could fail to cover younger users who lack formal ID.

"Proposed system of storing passports or driver's licences in Google Wallet app likely to benefit adults, but usefulness in identifying teenagers without ID documents unclear."

https://www.theguardian.com/australia-news/2025/may/08/google-age-id-proposal-may-not-suit-australias-under-16-social-media-ban-expert-says

K.12.31 "Social media age limits: QLD students part of world-first trial"

Published: 17 May 2025 – The Courier-Mail

Queensland schoolchildren joined the trial to evaluate age verification solutions in real-world conditions. The article details the types of technologies being tested and the scale of the pilot.

"Queensland students are participating in a world-first trial to test age verification technologies aimed at preventing underage access to social media platforms."

https://www.couriermail.com.au/news/queensland/social-media-age-limits-qld-students-part-of-worldfirst-trial/news-story/d5c7f88b80ae931039d8ac11885c1b84

K.12.32 "Tech used to trial ways to enforce Australia's under-16s social media ban is flawed"

Published: 20 May 2025 – The Mandarin

This article critiques the effectiveness of the technologies being tested in the Age Assurance Technology Trial. It also questions whether the voluntary participation of tech platforms undermines the trial's reliability.

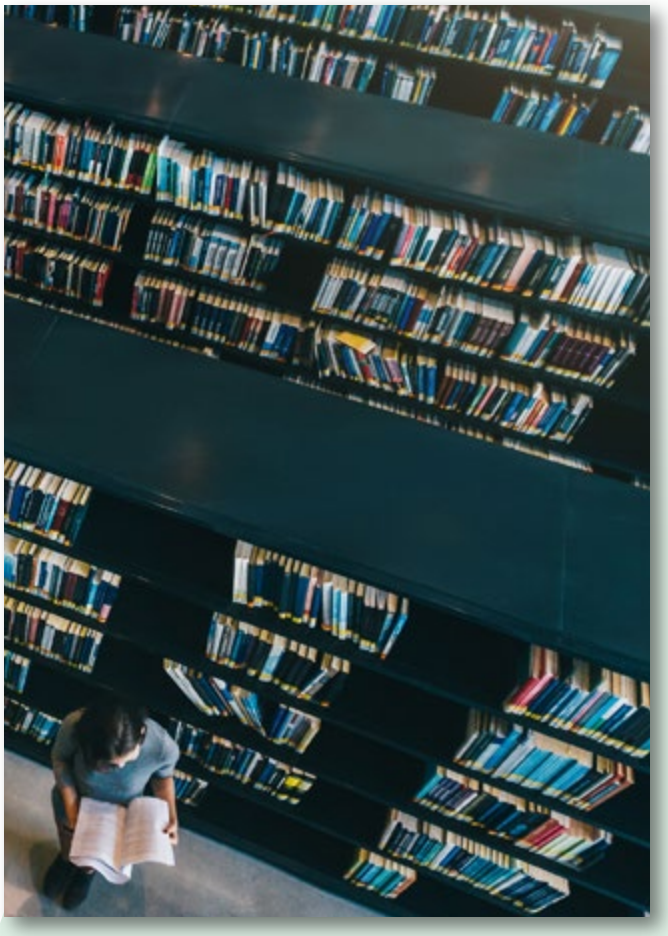
"Critics argue that the experimental age checks raise privacy concerns, and tech giants are sidestepping responsibility for enforcing Australia's youth social media ban."

https://www.biometricupdate.com/202505/australias-age-assurance-technology-trial-is-halfway-done

Age Assurance Technology Trial

IV

PART K
Bibliography



K.13 Bibliography

This bibliography refers to articles and works in the body of this Part K – Glossary, Bibliography and Literature Review Report, and all other parts of the final report.

K.14 Standards and Normative References

K.14.1 **Note:** The following Standards are referenced across the suite of reports. They are listed here rather than repeated for each of the bibliography sections. The Standards and Normative References that are unique to a certain report will be listed separately.

Standards	Normative References
IEEE 2089.1-2024	IEEE Standard for Online Age Verification
ISO/IEC 25000 Series	Systems and software Quality Requirements and Evaluation (SQuaRE) – Framework for the evaluation of software product quality
ISO/IEC 25010	Systems and software engineering – Systems and software Quality Requirements and Evaluation (SQuaRE) – Product quality model
ISO/IEC 25040	Systems and software engineering – Systems and software Quality Requirements and Evaluation (SQuaRE) – Evaluation Model
ISO/IEC AWI 25456	Information technology – Biometrics - Biometric data injection attack detection
ISO/IEC 27001	Information security, cyber security and privacy protection – Information security management systems – Requirements
ISO/IEC FDIS 27566-1	Information security, cyber security, and privacy protection – Age Assurance Systems – Framework
ISO/IEC 29119	Software and systems engineering – Software testing
ISO/IEC 30107	Information technology – Biometric presentation attack detection

K.15 Part A – Final Report

Legal Documents

- Audio Visual Media Services Directive (AVMSD)
- Children's Online Privacy Protection Act (COPPA)
- UN Convention on the Rights of the Child (UNCRC)

Standards and Normative References

- The suite of ISO standards which are listed on P.89.
- ISO/IEC 29184:2020 – Online Privacy Notices and Consent
- ISO/IEC 29146:2016 – Security techniques – A framework for access management

K.16 Part B – Methodology and Ethics

Legal Documents

- Archives Act 1983
- Australian Privacy Principles (APP) – Framework within the Privacy Act 1988
- Public Governance, Performance, Accountability Act 2013
- UN Convention on the Rights of the Child (UNCRC)

Standards and Normative References

- The suite of ISO standards which are listed on P.89.
- ISO/IEC 17065:2012 – Conformity Assessment: Requirements for Certification Bodies Certifying Products, Processes and Services
- ISO/IEC 17025 – Testing and calibration laboratories

Government and Official Documents

- Acecqa.gov.au, 'Embedding The National Child Safe Principles', 2023. Available: https://www.acecqa.gov.au/sites/default/files/2023-07/InfoSheet_EmbeddingTheNationalChildSafePrinciples.pdf#:~:text=In%20February%202019%2C%20the%20National%20Principles%20for%20Child,organisational%20cultures%20that%20foster%20child%20safety%20and%20wellbeing. [accessed July 2025]
- AIATSIS Code of Ethics for Aboriginal and Torres Strait Islander Research
- Australian Signals Directorate – Information Security Manual (ISM) Cyber.gov.au, 'Information security manual', 2025. Available: https://www.cyber.gov.au/resources-business-and-government/essential-cybersecurity/ism [accessed May 2025]
  esafety.gov.au,
- 'Roadmap for age verification and complementary measures to prevent and mitigate harms to children from online pornography', 2023. Available: https://www.esafety.gov.au/sites/default/files/2023-08/Roadmap-for-age-verification_2.pdf?v=1754446009009 [accessed December 2024]
- National Office for Child Safety – National Principles for Child Safe Organisations oaic.gov.au, 'Australian Privacy Principles' Available: https://www.oaic.gov.au/privacy/australian-privacy-principles Australian Privacy Principles | OAIC> [accessed June 2025]
- Protective Security Policy Framework

K.17 Part C – Age Verification

Legal Documents

- The Privacy Act 1988

Standards and Normative References

- The suite of ISO standards which are listed on P.89.

Government and Official Documents

- Trusted Digital Identity Framework (TDIF)
- Service Organization Control (SOC 2) Type II Frameworks

Journals, Articles and Learned Works

- Black, Andrew, Richardson, Siobhan, Urranndulla, Davis, 'Identity in Crisis: Addressing the Gaps for Aboriginal and Torres Strait Islander Peoples', 2024 <Identity-in-Crisis_Addressing-the-Gaps-for-Aboriginal-and-Torres-Strait-Islander-Peoples.pdf> [accessed February 2025]
- Digitalinclusionindex.org.au, 'Measuring Australia's digital divide', 2023 <https://www.digitalinclusionindex.org.au> [accessed February 2025]
- Mappingthedigitalgap.com.au, 'Measuring digital inclusion and media use in remote First Nations communities', 2022 – 2024 <Home - Mapping the Digital Gap> [accessed January 2025]

Online and Journalistic Sources

- Chandran, Rina, 'Indigenous Australians fear exclusion by digital ID', 2024 <Indigenous Australians fear exclusion by digital ID | Context by TRF> [accessed February 2025]

K.18 Part D – Age Estimation

Legal Documents

- EU General Data Protection Regulation (EU GDPR)
- The Privacy Act 1988
- UN Convention on the Rights of the Child (UNCRC)

Standards and Normative References

- The suite of ISO standards which are listed on P.89.
- ISO/IEC 18013-5: 2021 – Mobile driving licence (mDL) application
- Payment Card Industry Data Security Standard (PCI-DSS)

Government and Official Documents

- W3C Verifiable Credentials

- Humanrights.gov.au, 'Human Rights and Technology – Discussion Paper', 2019 Available: https://humanrights.gov.au/our-work/technology-and-human-rights/publications/discussion-paper-human-rights-and-technology [accessed March 2025]

Journals, Articles and Learned Works

- Attia et al., 'An artificial intelligence-enabled ECG algorithm for the identification of patients with atrial fibrillitation during sinus rhytyhm', 2019 <a retrospective analysis of outcome prediction> [accessed February 2025]
- Bianco, Simone, 'Large age-gap face verification by feature injection in deep networks', 2016 Avaiable: https://arxiv.org/pdf/1602.06149 Large age-gap face verification by feature injection in deep networks> [accessed June 2025]
- Frank et al., *Proceedings of the IEEE Symposium on Security and Privacy*, doi:10.1109/SP.2013.23 (2013) [accessed February 2025]
- Jamil et al., Sensors, doi:10.3390/s20082392 (2020) [accessed March 2025]
- Johnston, D, 'Statistical Learning Methods for Facial Demographic Analysis: An Exploration with the MORPH-II Dataset', 2019 Available: https://drewjohnston13.github.io/morphIIpaper.pdf morphIIpaper.pdf> [accessed July 2025]
- Seidler et al,. *Neuroscience & Biobehavioral Reviews*, doi:10.1016/j.neubiorev.2010.03.012 (2010) [accessed February 2025]
- Voelcker-Rehage & Alberts, *Exercise and Sport Sciences Reviews*, doi:10.1097/jes.0b013e318093f0ec (2007) [accessed February 2025]
- Weber et al,. CHI'11 Extended Abstracts, doi:10.1145/1979742.1979875 [accessed March 2025]
- Zhen et al., *Frontiers in Cardiovascular Medicine*, doi:10.1038/s41467-019-13850-6 (2022) [accessed February 2025]

Online and Journalistic Sources

- Cloudfare.com, 'What is Transport Layer Security', 2025 Available: https://www.cloudflare.com/learning/ssl/transport-layer-security-tls/"What is Transport Layer Security (TLS)? | Cloudflare [accessed July 2025]

K.19 Part E – Age Inference

Legal documents

- Children's Online Privacy Protection Act (COPPA)

Standards and normative references

- The suite of ISO standards which are listed on p.89.

Government and official documents

- CASA (Civil Aviation Safety Authority) Regulations
- Safety.gov.au, 'Understanding the digital behaviours of older Australians', 2018 <Understanding-digital-behaviours-older-Australians-summary-report-2018.pdf> [accessed March 2025]
- Service Organization Control (SOC 2) Type II Frameworks

Journals, articles and learned works

- Asla, Terryl, Williamson, Kirsty, 'Unexplored territory: information behaviour in the fourth age', 2015 <Charles Sturt University Research Output+1PMC+1> [accessed February 2025]
- Edwards, Ben, '*Growing Up in Australia*: The Longitudinal Study of Australian Children', 2014 <Growing Up in Australia: The Longitudinal Study of Australian Children: Entering adolescence and becoming a young adult - Family Matters 95, 2014> [accessed February 2025]

Online and journalistic sources

- Secureframe.com, 'What is SOC 2?', 2025 Available: https://secureframe.com/hub/soc-2/what-is-soc-2 What is SOC 2? A Beginners Guide to Compliance [accessed July 2025]
- Nevis.net, 'Eidas Regulation: The Key Concepts', 2025 Available: https://www.nevis.net/en/fundamentals/regulations-updates/what-is-eidas What is eIDAS? The key concepts explained [accessed June 2025]

K.20 Part F – Successive Validation

Legal documents

- Children's Online Privacy Protection Act (COPPA)

Standards and normative references

- The suite of ISO Standards which are listed on P.89

Government and official documents

- Service Organization Control (SOC 2) Type II Frameworks

Online and journalistic sources

- Secureframe.com, 'What is SOC 2?', 2025 Available: https://secureframe.com/hub/soc-2/what-is-soc-2 What is SOC 2? A Beginners Guide to Compliance [accessed July 2025]

K.21 Part G – Parental Control

Legal documents

- UK Age Appropriate Design Code (Children's Code)
- UN Convention on the Rights of the Child
- Children's Online Privacy Protection Act (COPPA)
- EU.U.S Data Privacy Framework

Standards and normative references

- ISO/IEC 29146: 2024 – Framework for Access Management

Government and official documents

- Nist.gov., 'NIST', 2025 Available: https://www.nist.gov/ National Institute of Standards and Technology [accessed March 2025]

Online and journalistic sources

- Apple.com, 'Share what you love with who you love', 2025 Available: https://www.apple.com/au/family-sharing/ [accessed June 2025]
- Esrb.org, 'ESRB Privacy Certified', 2025 Available: https://www.esrb.org/privacy/ [accessed June 2025]
- Families.google, 'Help keep your family safer online', 2025 < Available: https://families.google/familylink/ Family Link from Google - Family Safety & Parental Control Tools [accessed June 2025]
- Microsoft.com, 'Microsoft Family Safety', 2025 Available: https://www.microsoft.com/en-us/microsoft-365/family-safety?msockid=26dafa6f2ff16ffb3aa2efc92ee46ea2 Microsoft Family Safety | Microsoft 365 [accessed June 2025]

- Secureframe.com, 'What is SOC 2?', 2025 Available: https://secureframe.com/hub/soc-2/what-is-soc-2 What is SOC 2? A Beginners Guide to Compliance [accessed July 2025]

K.22 Part H – Parental Consent

Legal documents

- Children's Online Privacy Protection Act (COPPA)
- EU General Data Protection Regulation (EU GDPR)
- The Family Law Act 1975
- The Privacy Act 1988
- The Un Convention on the Rights of the Child

Standards and normative references

- ISO/IEC 29184:2020 – Information Technology – Online privacy notices and consent

- https://accscheme.com/wp-content/uploads/ACCS-0-2021-General-Scheme-Rules-3.pdf ACCS 0: 2021 General Scheme Rules

- https://www.accscheme.com/wp-content/uploads/ACCS-3-2021-Technical-Requirements-for-Age-Appropriate-Design-for-Information-Society-Services-1.pdf ACCS 3: 2021 Technical Requirements for Age Appropriate Design for Information Society Services

Government and official documents

- Wolford, Ben, 'What is GDPR, the EU's new data protection law?', 2019 Available: https://gdpr.eu/what-is-gdpr/ What is GDPR, the EU's new data protection law? - GDPR.eu [accessed June 2025]

- Nist.gov., 'NIST', 2025 Available: https://www.nist.gov/ National Institute of Standards and Technology [accessed March 2025]

- Oaic.gov.au, 'The Privacy Act', 2025 Available: https://www.oaic.gov.au/privacy/privacy-legislation/the-privacy-act [accessed May 2025]

Online and journalistic sources

- Accscheme.com, 'PAS 1296: 2018' Available: https://accscheme.com/services/pas-12962018/ [accessed June 2025]

- ESRB.org, 'Privacy Certified Seals', 2025 Available: https://www.esrb.org/privacy-certified-seals/ [accessed June 2025]

- Secureframe.com, 'What is SOC 2?', 2025 Available: https://secureframe.com/hub/soc-2/what-is-soc-2 What is SOC 2? A Beginners Guide to Compliance [accessed July 2025]
- Unicef.org.uk, 'How We Protect Children's Rights', 2025 Available: https://www.unicef.org.uk/what-we-do/un-convention-child-rights/UN Convention on Rights of a Child (UNCRC) - UNICEF UK [accessed June 2025]

K.23 Part J – Technology Stack

Legal documents

- Audio Visual Media Services Directive (AVMSD)
- Children's Online Privacy Protection Act (COPPA)
- Classification (Publications, Films and Computer Games) Act 1995
- Copyright Amendment (Online Infringement) Act 2015
- Digital ID Act 2024
- Online Safety Act 2021
- Privacy Act 1988
- UN Convention on the Rights of the Child (UNCRC)
- UNCRC General Comment No.25 (2021)

Standards and normative references

- ISO/IEC 29100:2011 Information technology – Security techniques – Privacy framework
- ISO/IEC 18013-5 – ISO/IEC 18013-5: 2021 – Mobile driving licence (mDL) application

Government and official documents

- Digital Technologies (Version 8.4)
- esafety.gov.au, 'Toolkit for Schools', 2024 <Toolkit for Schools | eSafety Commissioner> [accessed May 2025]
- Eur-lex.europa.eu, 'Audiovisual Media Services Directive (AVMSD)', 2019 Available: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM:am0005#:~:text=The%20EU%E2%80%99s%20Audiovisual%20Media%20Services%20Directive%20%28AVMSD%29%20governs,TV%20broadcasts%20and%20on-demand%20audiovisual%20media%20%2A%20services."Audiovisual Media Services Directive (AVMSD) | EUR-Lex [accessed June 2025]
- OAuth 2.0 – industry-standard protocol for authorisation
- Trusted Digital Identity Framework (TDIF)
- WCAG (Web Content Accessibility Guidelines)
- W3C Verifiable Credentials

K.24 Part K – Glossary, Bibliography and Literature Review

Legal documents

- Broadcasting Services Act 1992
- Coroners Act 2009
- Digital ID Act 2024
- Gambling Regulation Act 2003 Health.gov.au, 'Public Health (Tobacco and Other Products) Act 2023', 2023 <Public Health (Tobacco and Other Products) Act 2023 – Federal Register of Legislation> [accessed December 2024]
- legislation.vic.gov.au, 'Gambling Regulation Act 2003'<Gambling Regulation Act 2003 | legislation.vic.gov.au> [accessed December 2024]
- legislation.gov.au, 'Online Safety Act 2021', 2024 <Online Safety Act 2021 – Federal Register of Legislation> [accessed December 2024]
- Ohchr.org, 'Convention on the Rights of the Child', 1989 <Convention on the Rights of the Child | OHCHR> [accessed December 2024]
- Ohchr.org, 'General comment No. 25 (2021) on children's rights in relation to the digital environment', 2021 <https://digitallibrary.un.org/record/3906061/files/CRC_C_GC_25-EN.pdf> [accessed December 2024]

Standards and normative references

- ISO/TS 17755-2: 2020 Fire Safety – Statistical data collection – Part 2: Vocabulary

Government and official documents

- aph.gov.au, 'Online Safety Amendment (Social Media Minimum Age) Bill 2024', 2024 <Online Safety Amendment (Social Media Minimum Age) Bill 2024 – Parliament of Australia> [accessed December 2024]
- assets.publishing.service.gov.uk, 'Digital Resilience Framework', 2019 <UKCIS_Digital_Resilience_Framework.pdf> [accessed January 2025]
- au.yougov.com, 'Support for under-16 social media ban soars to 77% among Australians', 2024 <Support for under-16 social media ban soars to 77% among Australians | YouGov> [accessed December 2024]
- classification.gov.au, 'What are the ratings?' <What are the ratings? | Australian Classification> [accessed December 2024]
- digitalidsystem.gov.au, 'Australia's Digital ID System', 2024 <Digital ID | Digital ID System> [accessed December 2024]
- Esafety.gov.au, 'Deepfake trends and challenges – position statement', 2022 <https://www.esafety.gov.au/sites/default/files/2022-01/Deepfake-position-statement%20_v2.pdf?v=1750818724680" Deepfake-position-statement _v2.pdf> [accessed May 2025]
- Esafety.gov.au, 'Register of industry codes and industry standards for online safety', 2025 <https://www.esafety.gov.au/industry/codes/register-online-industry-codes-standards" Register of industry codes and industry standards for online safety | eSafety Commissioner> [accessed July 2025]
- esafety.gov.au, 'Industry codes and standards', 2024 <Industry codes | eSafety Commissioner> [accessed December 2024]
- esafety.gov.au, 'Roadmap for age verification and complementary measures to prevent and mitigate harms to children from online pornography', 2023 <Roadmap-for-age-verification_2.pdf> [accessed December 2024]

- esafety.gov.au, 'Development of Phase 2 Industry Codes under the Online Safety Act', 2024 <Development-of-Phase-2-Industry-Codes-under-the-Online-Safety-Act-eSafety-position-paper_0.pdf> [accessed December 2024]
- esafety.gov.au, 'Questions, doubts and hopes. Young people's attitudes towards age assurance and the age-based restriction of access to online pornography', 2023 <Questions-Doubts-and-Hopes.pdf> [accessed January 2025]
- esafety.gov.au, 'Public perceptions of age verification for limiting access to pornography', 2021 <Public perceptions of age verification for limiting access to pornography | eSafety Commissioner> [accessed January 2025]
- esafety.gov.au, 'Appendix 8: Independent assessment of age assurance and safety technologies, Roadmap for age verification – background report', 2023 <Appendices-to-background-report.pdf> [accessed December 2024]
- esafety.gov.au, 'Appendix 2: Call for evidence request and thematic summary of submissions, Roadmap for age verification – background report', 2023 <Appendices-to-background-report.pdf> [accessed December 2024]
- esafety.gov.au, 'Appendix 5: Consultation Summaries, Roadmap for age verification – background report', 2023 <Appendices-to-background-report.pdf> [accessed December 2024]
- esafety.gov.au, 'Appendix 7: Cross-sector workshop summary, Roadmap for age verification – background report', 2023 <Appendices-to-background-report.pdf> [accessed December 2024]
- Gov.uk, 'Families' attitudes towards age assurance: research commissioned by the ICO and Ofcom', 2022 <Families' attitudes towards age assurance: research commissioned by the ICO and Ofcom – GOV.UK> [accessed December 2024]

- Health.gov.au, 'Alcohol laws in Australia', 2024 <Alcohol laws in Australia | Australian Government Department of Health and Aged Care> [accessed December 2024]
- Health.gov.au, 'New laws for vapes', 2024 <New laws for vapes | Youth vaping | Australian Government Department of Health, Disability and Ageing> [accessed January 2025]
- Health.gov.au, 'Smoking and tobacco laws in Australia', 2024 <Smoking and tobacco laws in Australia | Australian Government Department of Health and Aged Care> [accessed January 2025]
- ico.org.uk, 'Measurement of Age Assurance Technologies', 2022 <Measurement of Age Assurance Technologies> [accessed November 2024]
- infrastructure.gov.au, 'Tender awarded for age assurance trial', 2024 <Tender awarded for age assurance trial | Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts> [accessed November 2024]
- legislation.gov.au, 'Guidelines for the Classification of Films 2012', 2012 <Guidelines for the Classification of Films 2012 – Federal Register of Legislation> [accessed November 2024]
- nist.gov, 'Face Analysis Technology Evaluation (FATE) Age Estimation & Verification', 2024 <Face Analysis Technology Evaluation (FATE) Age Estimation & Verification> [accessed January 2025]
- nist.gov, 'Risk Management Framework for Information Systems and Organizations – A System Life Cycle Approach for Security and Privacy', 2018 <Risk Management Framework for Information Systems and Organizations: A System Life Cycle Approach for Security and Privacy> [accessed December 2024]
- nt.gov.au, 'Young people, alcohol and drugs', 2016 <Alcohol and drugs | NT.GOV.AU> [accessed January 2025]
- ofcom.org.uk, 'Adult Users' Attitudes to Age Verification on Adult Sites', 2022 <Adult Users' Attitudes to Age Verification on Adult Sites> [accessed January 2025]

- ofcom.org.uk, 'Barriers to proving age on adult sites', 2023 <Barriers to proving age on adult sites – Ofcom> [accessed January 2025]
- ofcom.org.uk, 'Guidance for service providers publishing pornographic content – Consultation on draft guidance on age assurance and other Part 5 duties', 2023 <Consultation: Guidance for service providers publishing pornographic content> [accessed January 2025]
- onlinesafety.org.au, 'Draft Phase Two Codes - Consolidated Industry Codes of Practice for the Online Industry (Class 1C and 2 Material)', 2024 <Phase Two Codes | Online Safety> [accessed November 2024]
- Police.act.gov.au, 'Alcohol – Supply of alcohol to minors', <Alcohol | ACT Policing> [accessed December 2024]
- Police.nsw.gov.au, 'Alcohol and Young People' <Alcohol and Young People - NSW Police Public Site> [accessed December 2024]
- Police.tas.gov.au, 'Youth and Alcohol', 2022 <Youth and Alcohol - Tasmania Police> [accessed November 2024]
- Qld.gov.au, 'Supplying alcohol to under 18s', 2022 <Your rights and support | Health and wellbeing | Queensland Government> [accessed November 2024]
- safety.gov.au, 'Schedule 1 – Social Media Services Online Safety Code (Class 1A and Class 1B Material', 2023 <Schedule-1–Social-Media-Services-Online-Safety-Code-(Class-1A-and-Class-1B-Material).pdf> [accessed November 2024]
- Sa.gov.au, 'Information for parents of minors', 2023 <SA.GOV.AU - Information for parents of minors> [accessed December 2024]
- Vic.gov.au, 'Supplying alcohol to young people, 2023 <Supplying alcohol to young people | vic.gov.au> [accessed December 2024]

Journals, articles and learned works

- cdn.prod.website-files.com, 'Making Sense of Age Assurance: Enabling Safer Online Experiences', 2022 <636d13257232675672619f45_MAKING SENSE OF AGE ASSURANCE FULL REPORT - FOSI 2022_compressed.pdf> [accessed December 2024]
- drcf.org.uk, 'Measurement of Age Assurance Technologies – Part 2 – Current and short-term capability of a range of Age Assurance measures', 2023 <Measurement of Age Assurance Technologies - Part 2 Analysis> [accessed November 2024]
- Humphry, Justine, Boichak, Olga, Hutchinson, Jonathon, 'Emerging Online Safety Issues – Co creating Social Media with Young People – Research Report', 2023 <Emerging Online Safety Issues: Co-creating social media education with Young People> [accessed December 2024]
- Livingstone, S, Nair, A, Stoilova, M, van der Hof, S, Caglar, C, 'Children's Rights and Online Age Assurance Systems', The International Journal of Children's Rights, vol. 32, no.3 (2024), pp. 721-747 <https://doi.org/10.1163/15718182-32030001> [accessed December 2024]
- Sas, M, Mühlberg, J. T, 'Trustworthy Age Assurance?', (2024) [accessed December 2024]
- Shaffique, M. R, van der Hof, S, 'Research report: Mapping age assurance typologies and requirements' (2024) [accessed December 2024]
- Smirnova, S, Livingstone, S, Stoilova, M, 'Understanding of user needs and problems: a rapid evidence review of age assurance and parental controls' (2021) [accessed January 2025]
- Stoilova, S, Bulger, M, Livingstone, S, 'Do parental control tools fulfil family expectations for child protection? A rapid evidence review of the contexts and outcomes of use' (2023) [accessed January 2025]

- 5rightsfoundation.com, 'In our own words – children's rights in the digital world', 2021 <In-our-own-words-young-peoples-version-of-GC25.pdf> [accessed December 2024]
- adf.org.au, 'Providing alcohol to under 18s', 2023 <Understanding secondary supply of alcohol – Alcohol and Drug Foundation> [accessed January 2025]
- alcoholthinkagain.com.au, 'Alcohol and the law', 2024 <Alcohol Laws in WA | Alcohol Think Again> [accessed December 2024]
- bereal.com, 'Terms', 2023 <Terms – BeReal.> [accessed January 2025]
- bsky.social, 'Terms of Service', 2025 <Terms of Service - Bluesky> [accessed January 2025]
- Burt, Chris, 'Test lab, bias considerations for Australia age assurance trial revealed', 2025, <Test lab, bias considerations for Australia age assurance trial revealed | Biometric Update> [accessed February 2025]
- Butler, Josh, Taylor, Josh, 'Australia to ban under-16s from social media – but can't say how TikTok, Instagram and others will enforce it', 2024, <Australia to ban under-16s from social media – but can't say how TikTok, Instagram and others will enforce it | Internet safety | The Guardian> [accessed November 2024]
- couriermail.com.au, 'Has age verification trial made any difference for our kids?', 2024 <Has age verification trial made any difference for our kids?> [accessed August 2024]
- couriermail.com.au, 'Labor's social media age trial kicked into next year', 2024 <Labor's social media age trial kicked into next year> [accessed November 2024]
- couriermail.com.au, 'Social media age limits: Qld students part of world-first trial', 2025 <Social media age limits: Qld students part of world-first trial> [accessed May 2025]

- discord.com, 'Discord's Terms of Service', 2024 <Terms of Service | Discord> [accessed January 2025]
- Evans, Jake, 'Age assurance trial will not require social media companies to participate', 2024 <Age assurance trial will not require social media companies to participate - ABC News> [accessed May 2024]
- gamblinglaws.org.au, 'Gambling Laws In Australia 2025', 2025 <Australia Gambling Laws 2025, AU Gambling Regulations> [accessed January 2025]
- goodreads.com, 'Terms of Use', 2021 <Terms of Use> [accessed January 2025]
- Hohne, Josh, 'The questions that still need to be answered about Australia's social media ban', 2024 <Social media ban Australia: How will the age verification work, what platforms will be included and all the questions that still need to be answered about the social media ban> [accessed November 2024]
- How, Brandon, 'Age verification trial tests to be outsourced', 2024 <Age verification trial tests to be outsourced> [accessed May 2024]
- kbi.media, 'Incode Joins Australia's Age Assurance Technology Trial to Protect Children Online', 2025 <Incode Joins Australia's Age Assurance Technology Trial to Protect Children Online | KBI. Media> [accessed March 2025]
- Lavoipierre, Ange, 'How age verification rules for porn and social media could impact millions of Australian adults', 2024 <How age verification rules for porn and social media could impact millions of Australian adults - ABC News> [accessed May 2024]
- Lomas, Natasha, 'As Australia bans social media for kids under 16, age-assurance tech is in the spotlight', 2024 <As Australia bans social media for kids under 16, age-assurance tech is in the spotlight | TechCrunch> [accessed December 2024]

- McConvey, R. Joel, 'Age assurance from Big Tech potential non-factor in Australian trial', 2025 <Age assurance from Big Tech potential non-factor in Australian trial | Biometric Update> [accessed May 2025]
- McConvey, R. Joel, 'Australia's Age Assurance Technology Trial is halfway done', 2025 <Australia's Age Assurance Technology Trial is halfway done | Biometric Update> [accessed May 2025]
- McConvey, R. Joel, 'Age Assurance Technology Trial solidifies list of participants, adds Google', 2025 <Age Assurance Technology Trial solidifies list of participants, adds Google | Biometric Update> [accessed March 2025]
- mobileidworld.com, 'Australia Launches Blockchain-Based Age Verification Trial for Social Media', 2025 <Australia Launches Blockchain-Based Age Verification Trial for Social Media> [accessed April 2025]
- Nassar-Smith, Ali, 'Australia Tests Blockchain Age Verification for Social Media Access', 2025 <Australia Tests Blockchain Age Verification for Social Media Access - ID Tech> [accessed April 2025]
- nationalretail.org.au, 'National Sale of Knife Laws | Comparison Table', 2024 <National-Knife-Laws-Comparison-Table-v2.pdf> [accessed January 2025]
- policy.pinterest.com, 'Terms of Service' <Terms of Service | Pinterest Policy> [accessed January 2025]
- Salmon, Kaleah, 'Australia to test age verification tech for social media ban', 2025 <Australia to test age verification tech for social media ban> [accessed March 2025]
- Salmon, Kaleah, 'ShareRing joins Australian government trial for age verification', 2025 <ShareRing joins Australian government trial for age verification> [accessed April 2025]

- sbs.com.au, 'An expert warns age verification for porn 'doesn't work'', 2024 <An expert warns age verification for porn 'doesn't work' | SBS News> [accessed May 2024]
- smh.com.au, 'Australians like banning teens from social media…', 2024 <Resolve Political Monitor poll findings: Majority of Australians do not think social media age ban will work> [accessed January 2025]
- Sullivan, Helen, 'Australia passes world-first law banning under-16s from social media despite safety concerns', 2024 <Australia passes world-first law banning under-16s from social media despite safety concerns | Social media | The Guardian> [accessed November 2024]
- Taylor, Caleb, 'Prime Minister Anthony Albanese makes major call on 'age verification technologies' for social media', 2024 <Prime Minister Anthony Albanese makes major call on 'age verification technologies' for social media | 7NEWS> [accessed August 2024]
- Taylor, Josh, 'Australia should delay social media ban until age-check trial finishes, Google and Meta say', 2024 <Australia should delay social media ban until age-check trial finishes, Google and Meta say | Australian politics | The Guardian> [accessed November 2024]
- Taylor, Josh, 'Australia's social media ban is attracting global praise – but we're no closer to knowing how it would work', 2025 <Australia's social media ban is attracting global praise – but we're no closer to knowing how it would work | Technology | The Guardian> [accessed April 2025]
- Taylor, Josh, 'Deadline changed as tech firms grapple with Australia's age check and social media ban laws', 2024 <Deadline changed as tech firms grapple with Australia's age check and social media ban laws | Technology | The Guardian> [accessed December 2024]

- Taylor, Josh, 'Google age ID proposal may not suit Australia's under-16 social media ban', 2025 <Google age ID proposal may not suit Australia's under-16 social media ban, expert says | Australian politics | The Guardian> [accessed May 2025]
- themandarin.com.au, 'Tech used to trial ways to enforce Australia's under-16s social media ban is flawed', 2025 <Tech used to trial under-16s social media ban is flawed> [accessed May 2025]
- Wang, Jessica, 'Social media giants to be asked to join $6.5m age assurance trial to block kids from porn, violence', 2024 <Meta, TikTok to be asked to join $6.5m age assurance trial to block kids from porn, violence | The Courier Mail> [accessed July 2024]
- Weatherbed, Jess, 'Discord is verifying some users' age with ID and facial scans', 2025, <Discord is verifying some users' age with ID and facial scans | The Verge> [accessed April 2025]
- Yoti.com, 'Yoti announces participation in the Australian Age Assurance Trial', 2024 <Yoti announces participation in the Australian Age Assurance Trial · Yoti> [accessed December 2024]


Age Assurance
Technology Trial

The **Age Assurance Technology Trial** is a landmark national initiative evaluating the real-world performance, privacy, usability and security of age assurance technologies. Commissioned by the **Australian Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts,** the Trial assessed 48 vendors and over 60 distinct technologies across various sectors, including social media, gaming, adult content and online retail. Through lab-based testing, interviews, analysis, school-based trials and mystery shopper evaluations, the Trial investigated how well different solutions could confirm, estimate or imply a user's age in ways that are secure, privacy-preserving and inclusive.

At the heart of the trial was one fundamental question: **Can age assurance be done?** The answer – based on thousands of data points, stakeholder interviews and international standards – is **yes, it can.** While no single solution fits all contexts, the Trial found that a wide variety of technologies already meet meaningful thresholds for accuracy, security and privacy when carefully selected and implemented. The report offers a comprehensive evidence base to support regulators, industry leaders and the broader public in shaping a safer, age-appropriate digital environment for all Australians.

Visit us on social media...

@AgeCheckCert

Age Check Certification Scheme

www.ageassurance.com.au

AVID Certification Services Ltd t/a Age Check Certification Scheme, registered in England 14865982 • Unit 321 Broadstone Mill, Broadstone Road, Stockport, SK5 7DL, United Kingdom • ABN 76 211 462 157

ISBN 978-1-0681646-9-9