Technology assisted voting review

Paper 1
Issues and questions

Feedback deadline 13 January 2023

Contents

Introduction

Purpose of the paper

The NSW Electoral Commissioner is reviewing options for technology assisted voting in New South Wales for the 2027 State election and subsequent state and local government elections (the **review**).

This *Issues and Questions Paper* (the **paper**) asks a number of questions to stakeholders to inform the review and to provide assistance in preparing a submission. Some of the questions are broad in nature, while others are very specific. It is not expected or essential that submissions answer all the questions posed. That is entirely a matter for each stakeholder. The Commissioner welcomes any contribution.

The questions are framed by the matters referred to in the review's Terms of Reference, at Appendix A.

This paper also provides brief context and background for the review, including around benefits and risks of technology assisted voting and criteria for balancing those benefits and risks.

Informed by consultation feedback, research, and policy analysis, we intend to publish *Paper 2: Interim review report* in April 2023. This will provide another opportunity for input before the Electoral Commissioner's final recommendations are provided to the New South Wales Government and Parliament.

Consultation timetable 2022-23
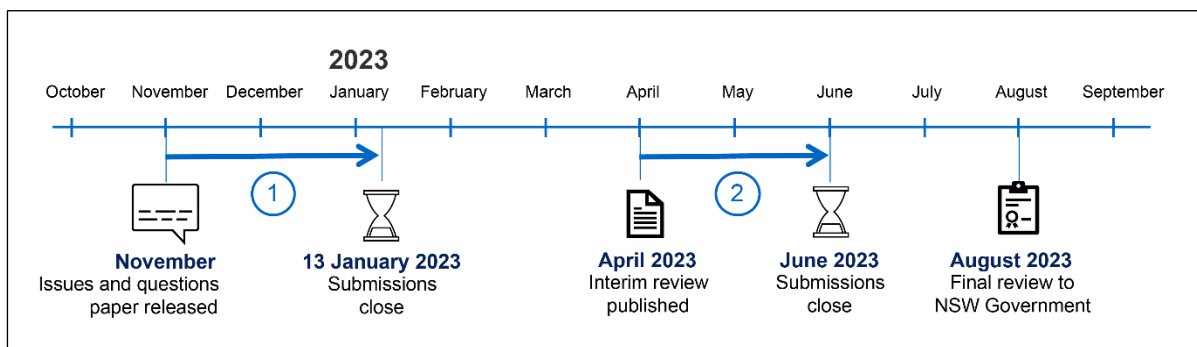
How to make a submission

Submissions are due by Friday, 13 January 2023

Stakeholders are encouraged to refer to the review's Terms of Reference and may wish to use the submission template on our website. Submissions should be written in an accessible format, following the NSW Electoral Commission's guidelines.

We prefer to receive submissions by email at TAV.Review@elections.nsw.gov.au

You may also send submissions by mail to:

Technology Assisted Voting review
NSW Electoral Commission
GPO Box 832
SYDNEY NSW 2001

The review team can be reached at TAV.Review@elections.nsw.gov.au or +61 (0)2 9291 2985.

Please contact the NSW Electoral Commission's Stakeholder engagement team at stakeholderengagement@elections.nsw.gov.au to arrange alternative accessible channels including video and guided interview and transcription.

Further information about the NSW Electoral Commission is on our website.

Publication of submissions and privacy

We intend to publish all submissions received on the NSW Electoral Commission's website. Please do not include any personal information in any submission, particularly of third parties, if you do not consider it to be suitable for publication.

In the case of individuals making submissions in a personal capacity, however, it is open to you to indicate if you prefer that your submission be published anonymously. If so, you should only include your personal information in the covering letter or email. Do not include any personal information in the submission itself that you do not wish to be published.

Names, contact details and addresses of people making submissions on behalf of organisations may be published on the website where they are contained in a submission (that is, they will not be redacted by us).

Please note that the NSW Electoral Commission may also be required or authorised by law to disclose any information you provide as part of the review, either in a covering letter or in a formal submission, regardless of website publication.

The NSW Electoral Commission may also redact or not publish any submission that, in our view, contains material that is discriminatory, offensive, defamatory, refers to matters currently before a court, contains sensitive health information or other personal information of third parties, or where it considers publication may otherwise be contrary to law.

Issues and questions framework

This paper is made up of three (3) parts. Part one is a summary of questions raised in the paper. Part two restates the questions alongside context and background to the issues. Part three, the appendices, provides further reading and reference material.

There is a submission template on our website where answers can be filled in and returned.

In preparing your submission, it is not mandatory to use the template or to answer the questions below, which are provided as a guide only to the issues being considered under the Terms of Reference of the review.

Part one – Summary of questions

Each one of the Terms of Reference below has a series of questions for consideration to which stakeholders are invited to respond. The first group of questions is a summary of the key issues that the Electoral Commissioner expects to address in the review.

Key issues the Electoral Commissioner intends to address in this review:

- Do the current settings for technology assisted voting in New South Wales remain appropriate to manage the level of risk to successful election delivery, compared to when iVote was first offered in 2011? If so, why? If not, why not?

- What specific changes, if any, to the current settings for delivering technology assisted voting would help to manage risk better? Should any or all of the following changes be made in New South Wales, noting some are already used in other jurisdictions:

  - allowing only a specified proportion (X%) of the total number of electors in a particular election to use technology assisted voting?

  - reducing the categories of New South Wales electors entitled to use technology assisted voting and, if so, which categories of electors should still have access?

  - limiting the registration and voting periods for technology assisted voting, such as requiring early pre-registration and excluding all such voting either on election day or from an earlier time prior to election day?

  - extending the time for electors (who have registered to use technology assisted voting) to cast a vote using technology assisted voting after 6pm on election day where performance issues have impacted its availability?

  - expanding the options and/or requirements for scrutineering by election participants of technology assisting voting and associated counting processes?

  - providing where technology assisted voting is unavailable for some eligible electors or for some of the voting period (for example, due to a performance issue) that a failure to provide this voting channel cannot affect the validity of the whole election?

- Are there any other methods of technology assisted voting that the review should consider besides telephone voting, internet voting on personal devices and voting kiosks in voting centres?

- Which technology assisted voting methods – or combination of methods – best meet the needs of any category of electors that should have access in the future? Why?

- Are there places outside New South Wales that already have established the right settings for technology assisted voting around security, accessibility, efficiency and cost? If so, are the elections in these other places sufficiently similar to New South Wales State elections in both scale and constitutional importance to be a sound comparison?

1. **The constitutional context for and policy objectives of the *Electoral Act 2017* (NSW) (the Electoral Act), including the protection of the franchise for all New South Wales residents who are eligible to vote**

   a) How can the different types of technology assisted voting support or challenge the principles and objects of electoral law in New South Wales, including:

      – accessibility

      – fairness

      – integrity of the electoral system

      – integrity of representative government

      – free and fair citizen participation in electoral processes

   b) Are there other principles or objectives that should be considered?

   c) How should these factors be addressed and, where necessary, balanced when designing technology assisted voting systems?

   d) How does technology assisted voting maintain or increase participation in elections and referenda for particular classes of electors or the general voting population?

2. **Contemporary community and industry standards for balancing accessibility, cost, privacy and security in digital transactions that are fundamental to the relationship between citizen and state**

   a) What factors should be included in a cost benefit analysis of technology assisted voting options? How could benefits such as accessibility or a secret vote be quantified?

   b) Do you agree that the Electoral Commissions of Australia and New Zealand (ECANZ) Essential Principles criteria (at Appendix B) should apply to any technology assisted voting system adopted in New South Wales? If not, are there other standards that are more suitable (for example, the Council of Europe, Switzerland or the United States)?

   c) To what extent do these standards adequately address integrity features such as vote verification and resilience to threat factors such as cyber-attack?

   d) Are there any particular standards that should be prioritised over others when designing technology assisted voting systems? If so, why should those standards be prioritised?

3. **The needs of electors who are blind or have low vision, and other electors with a disability, in relation to independently casting a secret and verifiable vote**

   a) What forms of technology assisted voting best support the independent casting of a secret and verifiable vote for electors with accessibility requirements? Please specify the requirements alongside the preferred form of technology assisted voting.

   b) Are there advantages in having kiosks at voting centres that provide speech output through headphones and buttons to scroll through the ballot and choose candidates? These may include controls that are identifiable tactilely or have braille, user control of font size and screen contrast.

   c) Can braille ballot papers or telephone voting meet the voting needs of some electors who are blind or have low vision? If not, why not?

   d) To support planning for elections and referenda and minimise performance risks, should eligible electors be required to pre-register for technology assisted voting ahead of election day? When should the registration deadline be (for example, one week before the election)? Should the voting period for these eligible electors close before election day (for example, one day or earlier before election day)?

e) If legally permitted, would it be appropriate for the Commissioner to verify eligibility of persons claiming to fall within a technology assisted voting elector class with external agencies or organisations?

f) What stages in the design and development of technology assisted voting systems should involve representatives of electors who are blind or have low vision, or who have a disability?

4. **The circumstances and requirements for electors located overseas, outside New South Wales or in rural and remote areas**

a) Noting that being outside New South Wales on election day is a lawful reason to be excused from voting, should technology assisted voting options be provided to these electors? If yes, what forms of technology assisted voting and why? What other options could be considered?

b) Noting that an elector in a remote location in New South Wales (more than 20km from a voting centre) has the option for a postal vote, should technology assisted voting options be provided to these electors? If yes, what forms of technology assisted voting and why?

c) To support contingency planning ahead of elections and referenda, should there be a requirement for pre-registration for these eligible electors to use technology assisted voting (for example, registration closes one week before the election day)? Should the voting period for these eligible electors close before election day (for example, one day or earlier before election day)?

d) If legally permitted, is it appropriate for the Commissioner to verify eligibility of these elector classes, for example by geolocation data such as an IP address or telephone caller location information? Do you have any further suggestions of how this information could be verified (beyond what has been suggested above)?

e) Should government or other digital identity credentials, such as a myGovID Account, be used as an elector verification channel for technology assisted voting?

5. **The risks and benefits of technology assisted voting to the integrity of the New South Wales electoral system, including the impact of technology assisted voting at different scales on the level of risk of technical error and on the rates of participation in New South Wales elections**

a) Do you agree with the existing eligible elector classes in Section 152 of the Electoral Act? Do you have any further refinements to existing classes or additions of classes? (Please provide supporting evidence)

b) Do you have verifiable estimates of the potential number of eligible electors in the existing (and potential other) classes?

c) Should there be a statutory formula for the assessment of materiality arising from technical error, for example the approach adopted by the Supreme Court in *Commissioner v Kempsey Shire Council (No 2)* [2022] NSWSC 282?

d) What is the optimal method to balance risks and benefits of technology assisted voting, taking into account the different classes of eligible electors and the varying characteristics of elected forums, roles or decisions in New South Wales such as:

− Legislative Council is a single electorate with 42 members elected by proportional representation for eight-year terms. Electors choose half the Legislative Council at each State General election. Electors may choose between above-the-line group vote or below-the-line votes for individual candidates.

− Legislative Assembly has 93 members, each elected to represent an electorate via an optional preferential system.

− Referendums require a binary yes/no response to each question

- Local government arrangements vary by council according to the number of vacancies to be filled. An optional preferential system is used where only one councillor is to be elected. A proportional voting system is used if 2 or more councillors are elected. Where mayors are elected by electors (as opposed to councillors), an optional preferential system is used.

e) Does technology assisted voting improve the enfranchisement (that is enrolment and voting of citizens in New South Wales) of particular classes of electors or in general?

6. **The feasibility of making technology assisted voting available through personal networked devices at the 2027 State election and subsequent state and local government elections**

a) Taking into account the ECANZ Eleven Essential Principles, are there any specific criteria that should be considered in the design of a technology assisted voting system for the 2027 election?

7. **The suitability of current legislation to support technology assisted voting and whether it should provide for special arrangements in the event of a technical failure (including, in appropriate circumstances, that the unavailability of technology assisted voting does not invalidate the result of an election)**

a) Is legislative reform required in New South Wales to support the reintroduction of technology assisted voting in 2027?

b) Should technical detail concerning vote verifiability be specified in legislation (for example software system design, computation and protection protocols in regulations)?

c) Could, and if so how, additional scrutineering by election participants for technology assisted voting (and counting) be specified in legislation?

d) Should legislation provide that performance issues with technology assisted voting during an election not be material to the validity of that election?

e) If yes to (d), would a proportion of the eligible electors in the specific contest be an appropriate threshold where a statutory 'invalidity waiver' was in place?

f) Should there be an overall cap on the proportion of electors eligible for technology assisted voting?

8. **Technology-related developments in electoral administrations in similar jurisdictions**

a) Should any specific features be adopted from other jurisdictions to improve the framework for ensuring voter and system integrity in New South Wales?

9. **Mechanisms for national coordination of technology assisted voting policies and systems for the States, Territories, and the Commonwealth**

a) Should a national approach be adopted to provide an Australian-wide capacity to offer technology assisted voting?

b) If yes, what governance model should apply to it?

c) How might it be funded?

Context for this review

What we are reviewing and why we are seeking feedback

The NSW Electoral Commissioner is committed to conducting accessible and fair elections and referenda with high standards of integrity.

In accordance with New South Wales electoral laws, during the past decade the NSW Electoral Commission has provided technology assisted voting (**TAV**) to support inclusion and access to secret voting using telephone and internet-connected personal devices. The needs of electors who are blind or have low vision drove the introduction of technology assisted voting. Eligibility to use technology assisted voting has also included electors with other disabilities, because these electors have difficulty voting at a voting centre or are unable to vote without assistance. Access to technology assisted voting has also been extended to include electors in remote locations within New South Wales and those who are outside the state (including overseas) on election day.

In 2021, the Commissioner conducted the largest internet voting event in Australian electoral history, the New South Wales Local Government general elections, with more than 600,000 electors successfully voting online using the iVote system. Despite this success, however, the delivery of iVote was not free from serious performance issues on election day. These issues ultimately led to the voiding of three councillor election contests because some electors entitled under law to use iVote were denied that opportunity.

The New South Wales Supreme Court confirmed that this lost opportunity to vote by technology assisted voting was legally material in the three contests that the Commissioner brought before the Court. The materiality test applied by the Court was whether the number of potential iVotes not cast by entitled electors was greater than the margin of votes between candidates at any exclusion point during the count. Elections in those three areas were required to be rerun. The Commissioner considers that this decision has significant implications for delivering future elections at which technology assisted voting is used.

Shortly after the local government elections, the Commissioner was also advised by the commercial supplier of key iVote software that an updated version of that software was required. The Commissioner formed the view that there was insufficient time for adequate customisation and performance testing of this new software to enable its secure deployment for the State election in March 2023. Subsequently, the Commissioner determined that iVote would not be used for that election with his formal determination being published in March 2022. The Commissioner considered it important to make this decision early enough for political participants, the Commission and affected elector groups to start to plan alternatives to using iVote.

These recent events have coincided with growing global concern about the potential vulnerability of internet voting to cyber-attacks, foreign interference, and an erosion of confidence in some areas around the reliability of electronic electoral systems.

In the period since technology assisted voting began in New South Wales, the Commission has worked to address issues and risks identified by technical experts and New South Wales electors. It should be assumed, for the purpose of this review, that technology assisted voting will only be made available again if the Commissioner is satisfied that the relevant software is fit-for-purpose in delivering a safe, secure and transparent election outcome, with appropriate safeguards and accessibility for the electors who use it.

It is acknowledged, however, that any electronic election system must have an inherent risk of failure, like any technology. The question for now is whether the settings that govern technology assisted voting should be adjusted before the 2027 State election to reflect any revised level of tolerance for risk, given the potential outcome of those risks materialising is the voiding of elections and referenda and a broader loss of trust in the integrity of the democratic process.

The Electoral Commissioner wishes to examine these issues now, while there is a window for recommending legislative reforms to the NSW Government and for exploring procurement options ahead of the State election in March 2027. The Commissioner looks forward to working with the community, political participants and other Australian electoral commissions to explore these issues in the coming months.

A brief history of technology assisted voting in New South Wales

The NSW Electoral Commission first provided technology assisted voting through iVote in 2011. It has featured:

1. operator assisted telephone voting

2. independent telephone voting using interactive voice recording, and

3. internet voting through a web browser.

iVote was used again for eligible electors in the 2015 and 2019 State general elections, a number of intervening State by-elections and at the 2021 Local Government elections.

The availability of technology assisted voting for people living with disability was of particular importance in the initial design of the iVote system. Peak bodies representing people who are blind or have low vision have consistently emphasised the importance of technology in providing a secret, independent and verifiable vote. Technology assisted voting also has been available to other classes of eligible electors, that is electors with other forms of disability, silent electors, electors in remote locations within New South Wales and electors outside New South Wales on election day.

In March this year, the Commissioner determined that, except for telephone voting for electors who are blind or have low vision, technology assisted voting will not be used at the March 2023 New South Wales State election or any state or local government by-election in the intervening period. The reasons for that determination are set out on the [website](#) of the NSW Electoral Commission. In October 2022, the New South Wales Parliament passed legislation which has confirmed these more limited arrangements for 2023.

This review focuses on the potential future use in New South Wales of technology assisted voting. The review will apply a risk-based assessment of technology assisted voting options, balancing the risk of technical reliability and cyber security threats with the needs of particular elector classes, the requirements of electoral laws and cost effectiveness.

The Electoral Commissioner aims to provide final recommendations to the New South Wales Government and New South Wales Parliament in 2023 to support further policy analysis and drafting of any required legislation in time for implementation well ahead of the 2027 State election.

Baseline statistics

Given the review is examining options for New South Wales, the baseline situations to be assessed and measured are informed by the most recent state-wide elector dataset (from the 2019 New South Wales State election). Stakeholders are asked to apply this baseline data in any modelling for this review to support comparative analysis.

Table 1: Enrolment and voting channels for the 2019 New South Wales State election

Enrolled electors	Legislative Council votes cast	Legislative assembly votes cast	Attendance votes	Early votes at centres	Absent votes	Postal votes	iVotes
5,271,775	4,752,827	4,714,783	2,910,477	1,023,986	333,391	136,572	234,401

Table 2: iVote usage at the 2019 New South Wales State election

Eligibility criteria	Number of iVotes cast	Percentage of total	Internet or telephone (operator assisted)	Telephone (interactive voice response)
Blind/low vision	1,174	0.50%	1,106	68
Reading disability	2,077	0.89%	2,038	39
Disability	12,773	5.45%	12,485	288
20km from a voting centre	7,381	3.15%	7,311	70
Outside NSW (interstate)	160,025	68.27%	158,657	1,368
Outside NSW (overseas)	47,977	20.47%	47,678	299
Silent elector	2,994	1.28%	2,946	48
Total	**234,401**	**100%**	**232,211**	**2,180**

Data relating to the usage of iVote at the 2021 Local Government elections does not include all New South Wales enrolled electors, as some Local Government Areas were under administration and did not hold elections or had engaged commercial election providers.

Table 3: Enrolment and voting channels for the 2021 New South Wales Local Government elections

Enrolled electors	Votes cast	Attendance votes	Early votes at centres	Absent votes	Postal votes	iVotes, including TAV
4,838,137	4,042,642	1,967,086	1,050,913	N/A at these elections	207,143	671,594

Table 4: iVote usage at the 2021 New South Wales Local Government elections

Eligibility criteria	Number of internet and telephone (operator assisted) votes cast Telephone (interactive voice response) not available	Percentage of total
Blind/low vision	2,382	0.4%
Other Disability	35,252	5.2%
Literacy	4,783	0.7%
20km from a voting centre	10,622	1.6%
No Postal Pack	11,048	1.6%
Outside Council Ward (inc. interstate, overseas)	601,553	89.6%
Silent elector	5,954	0.9%
Total	**671,594**	**100%**

Of the 671,594 iVotes cast, 2,555 (0.4%) were by telephone assisted operator calls.

More information on the iVote performance is available in the Report on the conduct of the 2021 NSW Local Government Elections.

Part two – Issues and questions

The questions summarised in the introduction above at page 4 are reproduced here with further background to the issues we are exploring in the review. It is not required that stakeholder submissions answer all questions posed.

Technology Assisted Voting – summary questions around current settings

Technology assisted voting refers to casting a vote by means of an electronic device (whether networked or not), such as by a telephone or by a computer.

This includes:

- Telephone assisted voting (supervised), where an elector phones a secure call centre and casts their vote through a telephone operator

- Telephone voting with an interactive voice recording (unsupervised) which allows the elector to vote through an automated phone system technology via voice or keypad input

- Internet voting (unsupervised), where an elector votes through a web browser or an application on their personal device (for example, mobile phone or laptop)

- Self-service digital kiosks (supervised) at voting centres where electors vote through video display screens (with visual and audio assistance) located at voting centres, not usually connected through the internet

- As a starting point, the questions below outline the core matters about the settings for technology assisted voting that the Electoral Commissioner believes are important to consider, as a minimum. These questions are not directly concerned with the technical ease (or otherwise) of procuring and delivering secure technology assisted voting options. They seek instead to prompt responses about any out-of-date constraints or authorisations conferred by the current legislative and operational settings. They are framed with an assumption that no NSW Electoral Commissioner should offer technology assisted voting unless they are satisfied to do so would not undermine the delivery of a trusted election outcome at the scale and constitutional importance of a New South Wales State election.

Subsequent questions in the paper are based specifically on the review's Terms of Reference and provide an opportunity to explore these issues in greater detail.

Questions

a) Do the current settings for technology assisted voting in New South Wales remain appropriate to manage the level of risk to successful election delivery, compared to when iVote was first offered in 2011? If so, why? If not, why not?

b) What specific changes, if any, to the current settings for delivering technology assisted voting would help to manage risk better? Should any or all of the following changes be made in New South Wales, noting some are already used in other jurisdictions:

- allowing only a specified proportion (X%) of the total number of electors in a particular election to use technology assisted voting?

- reducing the categories of New South Wales electors entitled to use technology assisted voting and, if so, which categories of electors should still have access?

- limiting the registration and voting periods for technology assisted voting, such as requiring early pre-registration and excluding all such voting either on election day or from an earlier time prior to election day?

- extending the time for electors (who have registered to use technology assisted voting) to cast a vote using technology assisted voting after 6pm on election day where performance issues have impacted its availability?

- expanding the options and/or requirements for scrutineering by election participants of technology assisting voting and associated counting processes?

- providing where technology assisted voting is unavailable for some eligible electors or for some of the voting period (for example, due to a performance issue) that a failure to provide this voting channel cannot affect the validity of the whole election?

c) Are there any other methods of technology assisted voting that the review should consider besides telephone voting, internet voting on personal devices and voting kiosks in voting centres?

d) Which technology assisted voting methods – or combination of methods – best meet the needs of any category of electors that should have access in the future? Why?

e) Are there places outside New South Wales that already have the right settings for technology assisted voting around security, accessibility, efficiency and cost? If so, are the elections in these other places sufficiently similar to New South Wales State elections in both scale and constitutional importance to be a sound comparison?

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1. Constitutional context for and policy objectives of the *Electoral Act 2017*, including the protection of the franchise for all New South Wales residents who are eligible to vote

Elections and referenda are fundamental to the system of representative government established by the *Constitution Act 1902* (NSW) (Constitution Act). The Constitution Act provides for the election of members of the Legislative Council and Legislative Assembly in the Parliament of New South Wales and also refers to persons 'entitled' to vote. That entitlement is reflected in the Electoral Act, which establishes the legal framework for the conduct of State elections and referenda in New South Wales. The *Local Government Act 1993* (NSW) provides additional legal requirements for the conduct of councillor and mayoral elections.

In the context of this review, the relevant objects of the Electoral Act, expressed at section 3, are:

- to promote and maintain an electoral system characterised by accessibility, integrity and fairness that provides for the election of members of Parliament of New South Wales in accordance with the Constitution Act

- to facilitate and protect the integrity of representative government in New South Wales

- to enable the citizens of New South Wales to participate freely in fair and transparent electoral processes

- to facilitate the fair and transparent conduct of elections in New South Wales.

Technology assisted voting is relevant to achieving these statutory objects in different ways. In submissions to this review, stakeholders may wish to assess and balance the interests embodied in these statutory objects.

The provisions for technology assisted voting in New South Wales are set out at Part 7, Division 11 of the Electoral Act. These were first enacted in 2010. The then Government's second reading speech for the legislation to enable iVote (*Parliamentary Electorates and Elections Further Amendment Bill 2010)* underlined the need for flexibility around procedures to ensure principles of accuracy, accountabiliy and transparency.[1]

The constitutional and statutory context is informed by other matters in this paper, including standards and principles for internet voting and emerging case law.

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[1] NSW, Parliamentary Debates, Legislative Assembly (24 November 2010), 28111-28112, John Aquilina, Parliamentary Secretary.

Questions

a) How can the different types of technology assisted voting support or challenge the principles and objects of electoral law in New South Wales, including:

- accessibility

- fairness

- integrity of the electoral system

- integrity of representative government

- free and fair citizen participation in electoral processes

b) Are there other principles or objectives that should be considered?

c) How should these factors be addressed and, where necessary, balanced when designing technology assisted voting systems?

d) How does technology assisted voting maintain or increase participation in elections and referenda for particular classes of electors or the general voting population?

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2. Contemporary community and industry standards for balancing accessibility, cost, privacy and security in digital transactions that are fundamental to the relationship between citizen and state

While technology assisted voting has already been deployed in a limited way in some Australian jurisdictions, detailed national policy or technical standards for internet features are still maturing. This situation is broadly consistent with other advanced liberal democracies globally.

Principles to guide the design and operation for an internet voting system were developed and endorsed in 2017 by the Electoral Council of Australia and New Zealand (ECANZ), a consultative council of the Electoral Commissioners of the Commonwealth, States and Territories of Australia and New Zealand. In drafting these principles, ECANZ examined the United States Election Assistance Commission's 'Voluntary Voting System Guidelines (VVSG 2.0)' and the Council of Europe's Standards for E-Voting (CM/Rec (2017)5).

The ECANZ *Eleven essential principles for an Australian internet voting service* reflect the objectives of **enfranchisement, integrity** and **privacy** in the design and operation of internet voting. Stakeholders may refer the full text of the principles at Appendix B.

The ECANZ principles were developed on the assumption that internet voting would not be universally available to all voters. They provide for eligible electors to vote independently regardless of disabilities, technology, or geography. Internet voting is envisaged as an additional and optional service for eligible voters which is offered in conjunction with other established methods of paper ballot voting.

Electoral Council of Australia and New Zealand (ECANZ)

4 July 2017

Eleven essential principles for an Australian internet voting service

1. Accessibility: as far as is practical, all eligible people should be able to access the internet voting service

2. Usability: the process of internet voting should be sufficiently easy for eligible people to cast a vote

3. One person, one vote: the ability to ensure that each eligible elector receives only their voting entitlement

4. Security: prevention of loss, corruption or tampering of votes

5. Robustness: the system and processes are not subject to significant interruption or failure

6. Transparency: the service and processes be designed to enable scrutiny, to provide stakeholder confidence

7. Independence: accountability for the system and processes shall rest with the Electoral Management Body

8. Impartiality: the voters intention should not be affected by the voting service

9. Accuracy: the service should accurately capture, store and export the voters intention

10. Privacy of personal information: the system and processes shall maintain the privacy of personal information

11. Secrecy of vote cast: the service shall maintain the secrecy of the votes cast.

Stakeholders may wish to review expert academic analysis of the ECANZ Principles and international electronic voting standards in publications such as Electronic Australian Elections[2] and Protecting Electoral Integrity in the Digital Age.[3] These articles highlight design and regulatory features required to ensure electoral integrity and transparency for internet voting.

Stakeholders may also wish to consider approaches to identifying costs and benefits when assessing technology assisted voting options for eligible elector classes. A detailed appraisal, in line with NSW Government's TPP 17-3: NSW Government Guide to Cost-Benefit Analysis, would need to be developed as part of any future technology assisted voting project. At this stage, however, the review is interested in understanding stakeholder views on this issue

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[2] Vanessa Teague and Patrick Keyzer, "Electronic Australian Elections: Verifiability of Accuracy is a Design Goal, which Must be Mandated by Law and Deliberately Designed into Electronic Electoral Processes", *Law in Context*, Volume 37, Issue 1 (La Trobe University, Bundoora, 2020), 42-65

[3] Aleksander Essex and Nicole Goodman, "Protecting Electoral Integrity in the Digital Age: Developing E-Voting Regulations in Canada", *Election Law Journal Rules, Politics and Policy*, Volume 19, Issue 2 (Mary Ann Liebert, New Rochelle, 2020), 162-179

Questions

a) What factors should be included in a cost benefit analysis of technology assisted voting options? How could benefits such as accessibility or a secret vote be quantified?

b) Do you agree that the ECANZ Principles criteria (at Appendix B) should apply to any technology assisted voting system adopted in New South Wales? If not, are there other standards that are more suitable (for example, the Council of Europe, Switzerland or the United States)?

c) To what extent do these standards adequately address integrity features such as vote verification and resilience to threat factors such as cyber attack?

d) Are there any particular standards that should be prioritised over others when designing technology assisted voting systems? If so, why should those standards be prioritised?

3. Needs of electors who are blind or have low vision, and other electors with a disability, in relation to independently casting a secret and verifiable vote

Meeting the needs of electors who are blind or have low vision, and other electors living with disability, was the key driver for the introduction of technology assisted voting in New South Wales. Organisations representing the interests of these electors are among the primary stakeholders in this review, including members of the NSW Electoral Commissioner's Equal Access to Democracy (EAD) Disability Reference Group.

The review seeks submissions on the policy and legal framework for disability access to voting, as well as practical feedback regarding the challenges and opportunities presented by different technology assisted voting options. Views are also sought on steps to optimise system stability and integrity for technology assisted voting solutions, for example early identification of eligibility and pre-registration of eligible electors.

Quesions

a) What forms of technology assisted voting best support the independent casting of a secret and verifiable vote for electors with accessibility requirements? Please specify the requirements alongside the preferred form of technology assisted voting.

b) Are there advantages in having kiosks at voting centres that provide speech output through headphones and buttons to scroll through the ballot and choose candidates? These may include controls that are identifiable tactilely or have braille, user control of font size and screen contrast.

c) Can braille ballot papers or telephone voting meet the voting needs of some electors who are blind or have low vision? If not, why not?

d) To support planning for elections and referenda and minimise performance risks, should eligible electors be required to pre-register for technology assisted voting ahead of election day? When should the registration deadline be (for example, one week before the election)? Should the voting period for these eligible electors close before election day (for example, one day or earlier before election day)?

e) If legally permitted, would it be appropriate for the Commissioner to verify eligibility of persons claiming to fall within a technology assisted voting elector class with external agencies or organisations?

f) What stages in the design and development of technology assisted voting systems should involve representatives of electors who are blind or have low vision, or who have a disability?

4. Circumstances and requirements for electors located overseas, outside New South Wales or in rural and remote areas

Internet voting for some electors has been supported on the basis that it facilitates voting by people who would otherwise face challenges participating in an election because of their location, for example electors who are outside New South Wales on election day or are at a location which is remote from a voting centre.

The non-technology alternatives for New South Wales electors – which are common to most Australian jurisdictions – include early attendance voting, postal voting, interstate attendance voting centres and international attendance voting centres (noting this final option has been rarely available in recent years due to security and pandemic concerns). Over the past two decades, the rise of electronic communication – and the corresponding decline in physical mail volumes – has also changed the commercial model of mail service providers, including Australia Post.

Stakeholders may wish to consider whether a pre-registration and early voting process – closing some time before election day – should be a feature of any future technology assisted voting system serving this class of eligible electors. This approach was adopted in the first iVote election in 2011, when registrations closed on the Wednesday, and voting by iVote closed on the Friday, before the Saturday election day.

In addition, the approach taken in the ACT of channelling overseas e-voting (OSEV) applications through the ACT Government's Digital Account service could be considered in the New South Wales context. The Commonwealth offers myGovID, which allows people to access federal government services and is exploring digital identity access to government services using other identity providers. The New South Wales Government does not presently offer a digital identity service but operates the Service NSW system for residents of the state to manage some interactions with government, including driver and other licences, identity documents, fines, health management, education services and other community support services.

Questions

a) Noting that being outside New South Wales on election day is a lawful reason to be excused from voting, should technology assisted voting options be provided to these electors? If yes, what forms of technology assisted voting and why? What other options could be considered?

b) Noting that an elector in a remote location in New South Wales (more than 20km from a voting centre) has the option for a postal vote, should technology assisted voting options be provided to these electors? If yes, what forms of technology assisted voting and why?

c) To support contingency planning ahead of elections and referenda, should there be a requirement for pre-registration for these eligible electors to use technology assisted voting (for example, registration closes one week before the election day)? Should the voting period for these eligible electors close before election day (for example, one day or earlier before election day)?

d) If legally permitted, is it appropriate for the Commissioner to verify eligibility of these elector classes, for example by geolocation data such as and IP address or telephone caller location information? Do you have any further suggestions of how this information could be verified (beyond what has been suggested above)?

e) Should government or other digital identity credentials, such as a myGovID Account, be used as an elector verification channel for technology assisted voting?

5. Risks and benefits of technology assisted voting to the integrity of the New South Wales electoral system, including the impact of technology assisted voting at different scales on the level of risk of technical error and on the rates of participation in New South Wales elections and referenda

The risks and benefits of technology assisted voting to the integrity of electoral systems have been widely discussed in a range of reports and reviews.

This review will evaluate the risk of technology assisted voting options by considering: (i) the materiality of technical error (including system availability) and (ii) the rates of participation. To support this, the review will consider estimates of the number of eligible electors for each existing (and potential other) classes. The technical error risk assessment will be guided by the legal principles established in *NSW Electoral Commissioner v Kempsey Shire Council (No 2)* [2022] NSWSC 282, which found that the failure of the iVote system in three of the 2021 NSW Local Government elections resulted in each election not being held in compliance with the relevant legislation. The judgment applied a calculation of materiality in each case – whether the number of potential iVotes not cast by entitled electors was greater than the margin of votes between candidates at any exclusion point during the count.[4]

Stakeholders are also encouraged to consider existing classes of eligible voters listed below and, with supporting evidence, suggest refinements to these existing classes or the addition of classes. As stated previously, this review assumes that technology assisted voting will not be universally available to all electors in the relevant time horizon (that is, 2027 and beyond). A primary aim of the review is to assess options for eligible electors to vote independently regardless of disabilities, technology or geography.

Section 152 of the Electoral Act currently provides for the following eligible elector classes:

a) the elector has a disability (within the meaning of the *Anti-Discrimination Act 1977*) and because of that disability he or she has difficulty voting at a voting centre or is unable to vote without assistance,

b) the elector is illiterate and because of that he or she is unable to vote without assistance,

c) the elector's residence is not within 20 kilometres, by the nearest practicable route, of a voting centre,

d) the elector is a silent elector,

e) the elector will not throughout the hours of voting on election day be within New South Wales,

f) the elector is a registered early voter (technology assisted voting),

g) in relation to a by-election—the elector will not throughout the hours of voting on election day be within the electoral district concerned.

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[4] NSW Electoral Commissioner v Kempsey Shire Council (No 2) [2022] NSWSC 282, at 83 and 97

Questions

a) Do you agree with the existing eligible elector classes in Section 152 of the Electoral Act? Do you have any further refinements to existing classes or additions of classes (please provide supporting evidence)?

b) Do you have verifiable estimates of the potential number of eligible electors in the existing (and potential other) classes?

c) Should there be a statutory formula for the assessment of materiality arising from technical error, for example the approach adopted by the *Supreme Court in Commissioner v Kempsey Shire Council (No 2)* [2022] NSWSC 282?

d) What is the optimal method to balance risks and benefits of technology assisted voting, taking into account the different classes of eligible electors and the varying characteristics of elected forums, roles or decisions in New South Wales such as:

- Legislative Council is a single electorate with 42 members elected by proportional representation for eight-year terms. Electors choose half the Legislative Council at each State General election. Electors may choose between above-the-line group vote or below-the-line votes for individual candidates.

- Legislative Assembly has 93 members, each elected to represent an electorate via an optional preferential system.

- Referendums require a binary yes/no response to each question

- Local government arrangements vary by council according to the number of vacancies to be filled. An optional preferential system is used where only one councillor is to be elected. A proportional voting system is used if 2 or more councillors are elected. Where mayors are elected by electors (as opposed to councillors), an optional preferential system is used.

e) Does technology assisted voting improve the enfranchisement (that is enrolment and voting of citizens in New South Wales) of particular classes of electors or in general?

6. Feasibility of making technology assisted voting available though personal networked devices at the 2027 State election and subsequent state and local government elections

This aspect of the review focuses on a subset of technology assisted voting – internet voting – that requires two-way transmission of voting information from devices and networks beyond the control of the NSW Electoral Commission. The feasibility of resuming internet voting in New South Wales in 2027 and beyond depends on having a system that operates within an acceptable risk profile. Setting the profile may require restricting access to certain classes of eligible electors or criteria for being an eligible elector.

Stakeholders are invited to consider the features – and provide examples – of systems that may meet requirements of eligible electors and the various voting configurations that operate in New South Wales: for the Legislative Assembly, Legislative Council, Local Government (mayoral and councillor) and referendums.

The ECANZ Eleven Essential Principles will form the underlying principles for this review for future internet voting options (Appendix B).

Question

a) Taking into account the ECANZ Eleven Essential Principles, are there any specific criteria that should be considered in the design of a technology assisted voting system for the 2027 and future elections?

7. Suitability of current legislation to support technology assisted voting and whether it should provide for special arrangements in the event of a technical failure

The provisions for technology assisted voting in New South Wales are set out at Part 7, Division 11 of the Electoral Act.

As previously noted, a technical failure (whether a performance issue with the system or a security problem) may create a material irregularity in the way an election in New South Wales is conducted, leading to its voiding and a requirement to hold a fresh election. In a worst case scenario, namely the failure of a State election, there would be major constitutional and cost implications. The review may recommend legislative change, therefore, as a result of its analysis of the current and preferred settings to deal with circumstances in which technology assisted voting is challenged or fails. To reduce the chance of a failure occurring and a result being challenged, this may include a position on new requirements for technology assisted design standards, expanded scrutineering options for election participants and "last resort" savings provisions in the case a technology assisted voting method experiences operational difficulties.

At the recent federal election the below savings provision for telephone voting was included to address a situation where that voting channel failed. That approach may offer a model for future changes to legislation for technology assisted voting in New South Wales.

> Commonwealth Electoral (COVID Enfranchisement) Regulations 2022 (Cth)
>
> Clause 7(4) provides that '*any failure to provide a telephone voting method does not invalidate the result of a general election, Senate election or by-election.*[5]

An equivalent savings provision, relating to the use of telephone voting at the 2023 NSW State General election by electors who are blind or have low vision, has recently been included at clause 14(6) of Part 4, Schedule 7 to the Electoral Act.

Questions

a) Is legislative reform required in New South Wales to support the reintroduction of technology assisted voting in 2027?

b) Should technical detail concerning vote verifiability be specified in legislation (for example software system design, computation and protection protocols in regulations)?

c) Could, and if so how, additional scrutineering by election participants for technology assisted voting (and counting) be specified in legislation?

d) Should legislation provide that performance issues with technology assisted voting during an election not be material to the validity of that election?

e) If yes to (d), would a proportion of the eligible electors in the specific contest be an appropriate threshold where a statutory 'invalidity waiver' was in place?

f) Should there be an overall cap on the proportion of electors eligible for technology assisted voting?

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[5] Parliamentary Library, *Telephone voting for coronavirus affected voters at the 2022 federal election* (Commonwealth Parliament, Canberra, 2002) see:
https://parlinfo.aph.gov.au/parlInfo/download/library/prspub/8571205/upload_binary/8571205.pdf;fileType=application%2Fpdf#search=%22library/prspub/8571205%22

8. Technology-related developments in electoral administrations in similar jurisdictions

The NSW Electoral Commission will consult with Australian and international electoral agencies to inform this review. Below is a brief outline of comparable jurisdictions where electronic (including internet) voting has been explored in different ways. Further discussion of these jurisdictions will be included in the interim report but stakeholders may wish to consider these systems, or any others they are aware of and believe should be taken into account.

The **Australian Capital Territory** provides kiosk-type facilities in early voting centres which then open on election day as ordinary polling places. The ACT's Electronic voting and counting (EVACS) system uses standard personal computers as voting terminals, which are linked to a server located in the polling station using a secure local area network. It is also equipped with headphones that deliver recorded audio instructions to guide an elector through the ballot paper and a keypad. The ACT's internet voting system, (Overseas e-voting or OSEV), is made available only to electors who are overseas.

Estonia has permitted internet voting (I-voting) since 2005, with almost half of electors (46.7 per cent) using this form of voting at European Parliament elections in 2019. The growth and endurance of internet voting in Estonia has been attributed, in part, to the broader effort to entrench e-government services, including an electronic identification scheme.[6]

In July 2022, **Switzerland** adopted laws to allow the resumption of electronic voting – which had been suspended in 2019 due to concerns of system integrity and vote manipulation. The legal framework and standards are set out in the Ordinance on Political Rights[7] and the Ordinance on Electronic Voting.[8] The proportion of electors using this channel is capped at 10 per cent nationally and 30 per cent in any cantonal electorate. Some cantons are planning to resume trials with the Swiss Post system.

Brazil relies on voting machines for the conduct of national elections. At the recent national and regional elections event (which included election of the President), more than 150 million registered voters were able to vote electronically at 94,028 voting centres. Brazil's electronic voting system was introduced in 1996, in part to combat fraud and to support voters with low literacy skills.[9]

Numerous jurisdictions within the **United States of America** use forms of technology assisted voting which are mainly kiosks in voting centres. Many jurisdictions that do offer electronic voting kiosks have been moving towards systems that also offer paper-verifiable audit trails.[10]

According to the Association of Municipalities Ontario, at municipal elections held in Ontario in **Canada** in October 2022 internet voting was available in over 200 elections, which was double the number from four years ago.

New Zealand offers self-printing of ballot papers overseas. Enrolled electors outside New Zealand can download and print a ballot. Completed ballots are scanned and uploaded online, sent via fax or posted/hand delivered to an overseas voting centre.

Question

a) Should any specific features be adopted from other jurisdictions to improve the framework for ensuring voter and system integrity in New South Wales?

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[6] Alex Mulholland, "Estonia leads world in making digital voting a reality" (London, The Financial Times 26 January 2021) at https://www.ft.com/content/b4425338-6207-49a0-bbfb-6ae5460fc1c1
[7] Ordinance on Political Rights (Berne, Switzerland Federal Chancellery, 2022)
[8] Ordinance on Electronic Voting (OEV) (Berne, Switzerland Federal Chancellery, 2022)
[9] See: https://www.france24.com/en/live-news/20220901-five-things-on-brazil-s-voting-machines
[10] https://electionlab.mit.edu/research/voting-technology

9. Mechanisms for national coordination of technology assisted voting policies and systems for the States, Territories and the Commonwealth

Technology assisted voting policies and systems have developed in different ways among Australian jurisdictions.

In 2017, ECANZ advocated for a national co-operative approach to the development and security of internet voting. In a letter to all First Ministers, ECANZ also sought greater collaboration between electoral commissioners and the Commonwealth, State and Territory intelligence and law enforcement agencies, through a coordinated national focus on cyber security for Australian election systems. [11]

Today, advice and support to state and territory electoral commissions on matters that may compromise the real or perceived integrity of Australian electoral events is coordinated through the Electoral Integrity Assurance Taskforce (EIAT). The EIAT is constituted by relevant agencies across the Commonwealth Government. [12]

Each of Australia's nine electoral commissions run its own election systems. The age and cyber security robustness of those systems varies from jurisdiction to jurisdiction, as does the capacity (financial and technical expertise) to maintain, upgrade and replace them. One option to reduce the financial and technical burden of technology assisted voting, even for the largest of the sub-national jurisdictions, may be to establish a national electoral technology platform.

Questions

a) Should a national approach be adopted to provide an Australian-wide capacity to offer technology assisted voting?

b) If yes, what governance model should apply to it?

c) How might it be funded?

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[11] Roger Wilkins, *Report* on *the Security of the iVote System* (Sydney, New South Wales Electoral Commission), 3
[12] See: https://www.aec.gov.au/about_aec/electoral-integrity.htm

Part three – Appendices

Appendix A – Terms of reference

Published September 2022

Context

Technology Assisted Voting (TAV) is a method of voting described under the *Electoral Act 2017* (NSW). Under technology assisted voting, an eligible elector votes by means of an electronic device (including a device connected to the internet or other communications network) such as a mobile or landline telephone, tablet, computer, or self-service kiosk. technology assisted voting has supplemented paper ballot voting in New South Wales for State elections since 2011 and was also used at the 2021 New South Wales Local Government elections.

On 15 March 2022, the NSW Electoral Commissioner determined that, except for telephone voting for electors who are blind or have low vision, technology assisted voting will not be used at the March 2023 New South Wales State election or any state or local government by-election in the intervening period. The reasons for that determination are set out on the website of the NSW Electoral Commission. Following that determination, the Electoral Commissioner also decided to undertake a review of technology assisted voting in consultation with stakeholders.

By August 2023, the Electoral Commissioner intends to provide recommendations for future options for technology assisted voting to the NSW Government, following a review conducted under these terms:

Terms

The NSW Electoral Commissioner will review and report on whether internet and other forms of technology assisted voting (in addition to ordinary telephone voting) can be provided by the NSW Electoral Commission at future elections and referenda for particular classes of eligible electors and, if so, in what form and at what scale.

The report will consider:

a) the constitutional context for and policy objectives of the *Electoral Act 2017*, including the protection of the franchise for all New South Wales residents who are eligible to vote

b) contemporary community and industry standards for balancing accessibility, cost, privacy and security in digital transactions that are fundamental to the relationship between citizen and state

c) the needs of electors who are blind or have low vision, and other electors with a disability, in relation to independently casting a secret and verifiable vote

d) the circumstances and requirements for electors located overseas, outside New South Wales or in rural and remote areas

e) the risks and benefits of technology assisted voting to the integrity of the New South Wales electoral system, including the impact of technology assisted voting at different scales on the level of risk of technical error and on the rates of participation in New South Wales elections and referenda

f) the feasibility of making technology assisted voting available though personal networked devices at the 2027 State election and subsequent state and local government elections

g) the suitability of current legislation to support technology assisted voting and whether it should provide for special arrangements in the event of a technical failure (including, in appropriate circumstances, that the unavailability of technology assisted voting does not invalidate the result of an election)

h) technology-related developments in electoral administrations in similar jurisdictions

i) mechanisms for national coordination of technology assisted voting policies and systems for the States, Territories and the Commonwealth

The review will report on administrative and legislative steps required to implement any recommended options for technology assisted voting, as well the potential financial and other resourcing impacts for the NSW Electoral Commission and NSW Government.

Review timetable

Consultation framework paper	14 October 2022
Submissions to interim review close	1 December 2022
Interim review published	3 April 2023
Submissions to final review close	2 June 2023
Final review to NSW Government	1 August 2023

Consultation

In conducting the review, the NSW Electoral Commissioner will seek contributions and advice from a range of stakeholders, such as:

- NSW Electoral Commission Disability Reference Group
    - NSW Electoral Commission Equal Access to Democracy Disability Reference Group (members include Blind Citizens Australia, Guide Dogs NSW and Vision Australia)

- Policy and technical
    - NSW Electoral Commission's iVote Advisory Panel
    - Election research centres (Australia and international)
        - Electoral Regulation Research Network
    - Other information technology experts

- Government
    - New South Wales central agencies
        - Department of Premier and Cabinet
        - The Treasury
        - Department of Customer Service, including Cyber Security NSW
    - New South Wales agencies with responsibility for disability policy and services
        - Ageing and Disability Commission
    - Department of Foreign Affairs and Trade (Commonwealth)
    - Department of Home Affairs (Commonwealth)
        - National Counter Foreign Interference Coordinator
    - Australian Signals Directorate
        - Australian Cyber Security Centre

- Electoral
    - Electoral Council of Australia and New Zealand (ECANZ): All Australian and New Zealand electoral commissions

- Regional/remote

    Electors who have participated in NSW Electoral Commission voter experience surveys about iVote

Appendix B – Eleven essential principles for an Australian internet voting service

The following eleven essential principles for an internet voting service were endorsed by the Electoral Council of Australia and New Zealand (ECANZ) on 4 July 2017.

These principles are reflective of existing best electoral practices as they apply to current voting channels.

In developing these principles, the ECANZ examined the United States Election Assistance Commission's 'Voluntary Voting System Guidelines (VVSG 2.0)', and the Council of Europe's intergovernmental standards for e-voting (CM/Rec (2017)5) – drawing on these standards and principles to develop eleven essential principles to guide the design and implementation of an internet voting service in Australia for use by all member Electoral Commissions.

Enfranchisement

Accessibility

- as far as is practical, all eligible people should be able to access the internet voting service

The internet voting service shall be designed, as far as practicable, to enable eligible voters to vote independently regardless of disabilities, technology, or geography. The internet voting service will be an additional and optional service for specific eligible voters to use. It would be offered in conjunction with other pre-existing methods of voting.

Usability

- the process of internet voting should be sufficiently easy for eligible people to cast a vote

The user interface of the internet voting service should be easy to understand, intuitive, and able to be used by all eligible voters on multiple technology platforms. Information provided may be presented differently depending on the differing technologies and channels which the service can be accessed on. For example, the electoral content presented on an electronic ballot paper will be the same as on the physical paper ballot paper (ensuring impartiality and equitably); however, changes may be made in accordance with relevant legislative provisions while ensuring usability on each technology platform.

One person, one vote

- the ability to ensure that each eligible elector receives only their voting entitlement

The internet voting service should enable each eligible voter to be uniquely identified, ensuring that they are distinguishable from other voters. The service should cater for any legislative requirements around the presentation of identification documents. An eligible voter will only be able to use this channel if they can be uniquely identified this way. The service will check eligibility and only grant access to those that have been authenticated as an eligible voter. The service will have a process to ensure that only one vote per eligible voter is admitted to the count.

Integrity

Security

- prevention of loss, corruption or tampering of votes

The internet voting service and responsible Electoral Management Body shall protect authentication data so that unauthorised parties cannot misuse, intercept, modify, or otherwise gain knowledge of this data. The authenticity, availability and integrity of the electoral roll and lists of candidates shall be maintained. Only persons authorised by the electoral management body shall have access to the central infrastructure, the servers, and the electoral event data.

The audit system should be able to detect voter fraud and provide proof that all counted votes are authentic. The audit system shall be open and comprehensive, and actively report on potential issues and threats. Where incidents that could threaten the integrity of the service occur, those responsible for operating the equipment shall immediately inform the electoral management body. Procedures shall be established to ensure regular installation of updated versions and corrections of all relevant software as the service will need to be continually evolved to meet and protect against potential and actual issues and threats.

The service will encrypt votes if they are to be stored or communicated outside controlled environments. The electoral management body shall handle all cryptographic material securely. Votes shall be kept sealed[13] until after the close of polling.

Robustness

- the system and processes are not subject to significant interruption or failure

Robustness applies to people, process, and technology. The internet voting service must be available, reliable, and secure to ensure that it can function on its own, irrespective of shortcomings in the hardware or software. The technical solution for the service will be peer-reviewed to help ensure availability, reliability, usability, and security. The service shall identify votes that are affected by an irregularity so that necessary measures are taken, and stakeholders are informed. The electoral management body administering the service will ultimately be responsible for compliance with the above even in the case of failure.

Transparency

- the service and processes be designed to enable scrutiny, to provide stakeholder confidence

The internet voting service and accompanying processes will be established with a focus on transparency. The service will ensure that the way in which eligible voters are guided through the internet voting process shall not lead them to vote without due diligence or without confirmation. The service should be designed to allow the voter to express his or her true will. A voter will be allowed sufficient time to consider their choices and will be under no obligation to commit their vote without time for reflection on their choices. Upon casting their vote, the service will verify to the voter that his or her intention is accurately represented and that the vote has been submitted. Any alteration to the voter's vote should be detected by the service.

Voters and third parties should be able to observe the count of the votes and check that only eligible voters' votes are included in the results. The service will provide evidence that only eligible voters' votes have been included and this evidence will be auditable.

Clear and unambiguous information about the internet voting service should be available to the public explaining how to use the service and how the service operates.

The service should be open for verification, assurance, and scrutiny purposes. Observers, to the extent permitted by law, shall be enabled to observe, comment on, and scrutinise the internet voting component of an election, including the compilation of the results.

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[13] Sealed is an analogy to the seal on a physical ballot box. This is the term used in the European standards

Independence

- accountability for the system and processes shall rest with the Electoral Management Body

The electoral management body will be accountable for the internet voting service of an electoral event. The electoral management body must be able to put into place assurances that maintain their electoral integrity and independence.

Impartiality

- the voter's intention should not be affected by the voting service

An eligible voter's intent should not be affected by the internet voting service. The service will ensure that the way in which voters are guided through the process and the information displayed will not influence their vote.

The service should be structured to ensure that voter's do not miss anything during the voting process. It should provide a means for informal voting by allowing a blank vote to be cast, however advising the voter they would be casting an informal vote and providing them with the option to change their vote if they wish. This provides an equitable approach across channels enabling voters to cast an informal vote via both the service and the paper-based option. Other than a blank ballot paper, all formality rules will be enforced by the service.

Accuracy

- the service should accurately capture, store, and export the voters intention

The internet voting service shall provide sound evidence that only votes from eligible voters are included in the result while de-identifying a completed ballot paper from its voter. The service shall support the voter in marking the ballot paper and accurately store, capture, verify, and export the vote cast. Before an event, the electoral management body administering the service shall satisfy itself that the service is genuine and operates correctly.

The service shall allow and support evaluation regarding the compliance of the service and its related components. This should occur upon introduction, periodically and after significant change to the service has been made.

Privacy

Privacy of personal information

- the system and processes shall maintain the privacy of personal information

The internet voting service shall process and store, if necessary, only the personal data needed for the conduct of the electoral event. The electoral management body administering the service will determine what information is deemed necessary to keep and dispose in accordance with relevant legislative obligations. Any information retained will be secure and any information not required to be retained will be securely disposed of.

Secrecy of vote cast

- the service shall maintain the secrecy of the votes cast

The internet voting service shall be organised in such a way as to ensure that the secrecy of the vote is respected at all stages of the voting process – from pre-polling through to counting of the votes. Votes shall remain sealed until the counting process commences. During completion of the ballot paper, the service will protect the secrecy of the voter's choice. The service should not provide a proof of vote preferences that would facilitate coercion or vote buying.

The service will be able to de-identify a voter from their completed ballot paper to preserve the secrecy of the ballot. The order in which votes are cast shall be mixed to deny reconstruction of the order of votes submitted.

Optional submission template

There is a submission template is available on our website.