



Innovating Democracy

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Chair, Senator the Hon James McGrath
Joint Select Committee on Electoral Matters,
P.O. Box 6021,
Parliament House,
Canberra, ACT 2600
Phone: (02) 6277 2374
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Re: Inquiry on the future conduct of elections operating during times of emergency situations

Dear Senator and Committee,

Thank you on behalf of ScytI Australia Pty Ltd. for presenting the opportunity to provide a submission to this inquiry on the conduct of elections during emergency situations.

ScytI is a provider of products and services for electoral modernisation. As the technology provider for the secure online voting system known locally as iVote®, I believe we can provide some insight into the following term of reference:

In conducting its inquiry, the Committee shall have particular regard to:

- ...
- *alternative voting methods including early, remote and postal voting.*

I hope that the committee finds value in this submission.

Yours Sincerely,

Lachlan (Sam) Campbell
Director, ScytI Australia Pty. Ltd.

Submission to:

Inquiry into the future conduct of elections operating during times of emergency situations.

By ScytI Australia Pty. Ltd.
November 2020

Addressing the term of reference:

- alternative voting methods including early, remote and postal voting.

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1 Executive Summary

This submission proposes using an online voting solution as a voting channel during times of emergency situations, and presents a means to maintain a solution at times when there is no emergency based on:

- Implementation of a scalable service, ready to scale in the event of an emergency
- Use of that scalable service during normal elections to collect votes from specified cohorts of voters
- Build further knowledge within the AEC and other government agencies as required regarding management of a secure online voting system

This results in a team ready to scale up an existing system, performing a normal operation they are trained to do, should it be needed for an emergency.

2 Recommendation

ScytI makes the following recommendation for consideration by the committee:

That legislation be put in place to provide an online voting platform to facilitate the collection of votes from visually impaired voters and potentially other cohorts such as those overseas, as this provides a base which scales to collect ballots in the event of an emergency situation.

3 Introduction

The COVID-19 pandemic that is sweeping the world in 2020 has placed huge stresses on people, organisations, and governments the world over. The ability for organisations to make plans has been severely limited due to the unpredictable nature of the event. Bodies responsible for running elections dealt with the situation as best they could – and in Australia thus far this has been achieved with flying colours. Review of the ACT election, NT election, 2 elections in Queensland in the same year, and a couple of by-elections have shown processes and procedures deployed rapidly and successfully to keep people safe when voting.

A question to consider is what would have happened if Victoria needed to run a state or federal election, after the lockdown was announced. In a potential scenario where logistics were severely hampered, the mail is not getting through, and the writ has been issued an election result may find itself in front of the court of disputed returns on top of any other impacts.

There are also other emergencies to consider – for example an emergency resulting in an interruption to all postal services from the UK and inability to travel to Australia House in London - Australia collects a significant number of votes from voters based in the UK, and an emergency there may prevent those ballots making it into the count.

4 About ScytI

ScytI is a global leader in secure election modernisation solutions, with significant resources invested in the research and development of online voting protocols and software. ScytI has worked in the area of secure electronic voting since before 2000 and has delivered electronic voting projects across the world – from Australia, to Canada, the United States, Norway, Switzerland, and others.

In Australia ScytI has successfully delivered the following electronic voting projects:

- NSW – the iVote®¹ project – still the world's largest state government binding online voting event, 2015, 2019
- Western Australia – the iVote project to allow votes from the visually impaired and other voters who were incapacitated, 2017
- Victoria – Secure electronic voting for the visually impaired 2006, 2010

ScytI sees secure electronic voting and specifically secure internet voting, as a means to collect those votes that are otherwise “hard to get” – from those with accessibility issues, those who are travelling on election day, and an ideal substitute for declining postal voting services. In an emergency that restricts movement or creates logistical problems, it clearly has a place.

5 Online Voting

This section provides information regarding the collection of remote votes with an emphasis on secure online voting. For the purposes of design and modelling, we draw parallels between the postal ballot and an internet delivered ballot. They are both remote voting options, open to similar risks – vote interception, shoulder surfing, coercion, and impersonation. In the internet voting space ScytI technologies provide options to reduce these risks, in a way that can't be matched by a postal ballot.

5.1 The postal service

Postal voting is a notable channel for the collection of votes across Australia, however there are clear risks related to the postal system, such as it's costs and availability.

Reliance on the declining postal service during an emergency situation has its own set of risks. It was reported that during the lockdown in Victoria that Australia Post had reduced staffing in distribution centres and routed packages through Sydney², adding time and delay. There were also changes to Australia Post delivery standards as put in place by the Australian Government³ which may affect Post usage in emergencies.

The impact of the changes in service provision from Australia Post have been discussed in electoral circles for some time. According to the “Report on the ACT Legislative Assembly Election 2016”:

560 (80%) of the 701 postal votes that were rejected because they were received too late were postal votes sent to and received from an address overseas.⁴

ScytI considers that reliance on a postal voting service will place ballots increasingly at risk into the future, regardless of any impact of an emergency.

5.2 Comparing a postal ballot with an internet delivered ballot

An internet delivered ballot operates in many regards similarly to a postal ballot. In this part we describe some similarities and differences between an electronic ballot delivered over the internet, and a postal ballot. These two forms of voting are both considered in this document as remote voting and as such can reduce risks to voters in a pandemic, where voters may not wish to attend a polling place in order to protect themselves.

The internet is an interconnected network of computers through which a vote passes to be stored in a digital ballot box. Depending on the source of the vote (i.e.: where the voter connects to the internet)

¹ iVote® is a registered trademark of the NSW Electoral Commission

² <https://www.theage.com.au/national/victoria/why-your-australia-post-parcels-are-making-a-1500-kilometre-detour-20200821-p55o4d.html>

³ <https://theconversation.com/youve-got-less-mail-covid-19-hands-australia-post-a-golden-opportunity-to-end-daily-letter-delivery-140848>

⁴ https://www.elections.act.gov.au/_data/assets/pdf_file/0016/1044016/Report-on-the-ACT-Legislative-Assembly-Election-2016.pdf p38.

there are a myriad of paths through which the vote could travel before it comes to the central server. This is very similar to the postal network – depending on which post box the voter places his postal ballot in, there are a myriad of ways the ballot can get back to the electoral commission for opening.

Some parallels:

- Both networks converge to a central point
- Both networks have the feature that someone could intercept the ballot (however this can only be detected in iVote)
- The voter's ballot is placed into an envelope (paper and glue or cryptographic)
- The envelope is signed by the voter (handwriting or cryptographic)

Some differences:

- In postal voting:
 - the vote is protected with a paper envelope, offering a low level of protection
 - the voter's envelope is signed with a handwritten signature
 - if the postal worker intercepts a ballot they can potentially read and/or change the content with little chance the voter will discover this
 - there are a large number of actors involved allowing bad actors access to the process, with low oversight of an individual's actions
- In iVote:
 - the vote is protected by high security encryption, offering a high level of protection
 - the vote is signed by a voter's digital signature which is extremely difficult to forge
 - if an attacker on the network intercepts a ballot they cannot read the content, and if they prevent the vote from getting to the server, the voter will be able to detect this.
 - there are a small number of players involved allowing oversight across individuals involved in the process
 - the systems support controls which record evidence of actions by operators

In Austria in 2016, "Austria [...] delayed a re-run of a presidential election as faulty glue on postal ballots [...] The result of the first election in May [...] had already been scrapped due to irregularities in counting the postal ballots"⁵.

5.3 Risk minimisation – remote voting

There are various techniques that can be utilised in online voting systems which reduce the risks associated with remote voting, which are not readily applied to postal voting. Below is a brief summary.

<i>Risk</i>	<i>Mitigation</i>
vote interception	Verification techniques
shoulder surfing, coercion	Make available ability to revote Use of distress codes
impersonation	Reduced somewhat inherently in a compulsory voting environment

⁵ <https://www.reuters.com/article/us-austria-election/austrian-election-re-run-comes-unstuck-in-postal-ballot-setback-idUSKCN11I0NA> 2/March/2018

5.4 Collecting voters for the visually impaired

The use of an online voting solution can support accessibility features giving visually impaired voters, and other voters who can't access a polling booth, the ability to cast their vote securely and in private. ScytI received an Innovative Practice Award by the Zero Project⁶ for its "Support of Independent Living and Political Participation" for its work on iVote. The Zero Project is a joint initiative of the Essl Foundation, the World Future Council and the European Foundation Centre, that promotes the rights of persons with disabilities and also has the support of organisations such as the United Nations, IFES and the International Telecommunication Union (ITU).

Australia is a signatory to the United Nations Convention on the Rights of Persons with Disabilities, and this Convention provides the right to equal access in political and public life, as enshrined in Article 29. The use of iVote would support the obligation of the Australian Government to provide an accessible voting system that facilitates the collection of a secret ballot for blind and low-vision voters.

I would like to refer to recommendation 24 from the previous Joint Standing Committee on Electoral Matters in the review of the 2016 Federal election⁷ which did not appear to have been taken up by the government at that time:

Recommendation 24

4.126 The Committee recommends that the Australian Government investigate the feasibility of extending the NSW iVote system to blind- and low-vision voters only in federal elections.

This submission also supports that recommendation, or some comparable alternative.

5.5 Operations under pressure

In an emergency situation, not all organisations operate at their best. Maybe staff are stretched, or simply not available. Decisions may be rushed, and plans taken with insufficient testing,

It is for this reason that ScytI does not advocate for the initial implementation of secure online voting systems during an emergency – we advocate implementing systems and having them available so that if an event arises that requires the usage of the system, teams are in place and already trained to operate the system. Legislation could be proposed to allow a system to be used for a special purpose and deployed rapidly rather than looking for a specialist to try and implement a system in a short period of time.

5.6 Online voting – security

This submission does not attempt to cover the security protocols of a secure online voting system, such as that seen in iVote in NSW and more generally in the products ScytI provides to governments across the world, however this information can be supplied should the committee request it. This information is available to the AEC and other electoral commissions and those interested in the field. Systems we have worked on in Australia have been examined by government agencies resulting in a state parliamentary report⁸ as well as various other examinations and post election reports.

When considering such secure online voting systems, ScytI is not referring to some of the vote tally systems available commercially, or other systems where emails and so on are accepted. ScytI is referring to systems which use a protocol that encrypts a vote throughout its lifetime (end-to-end encryption) and removes any linkage between the voter and the vote. This is extended with cryptographic protocols to protect the privacy of the vote, allow detection of tampering with the content of a vote, and provide means for voters to verify with comfort that their vote has been captured as they intend it.

⁶ <https://zeroproject.org/practice/practice/pra191431aus-factsheet/>

⁷ Parliament of the Commonwealth Of Australia - Report on the conduct of the 2016 federal election and matters related thereto

⁸ Report on the Security of the iVote System, by Roger Wilkins AO to the NSW Parliament, 2018

6 Proposed solution

A secure online voting solution is a complex system installed across servers in a secure environment. Like all computer systems, its use requires the correct skills to manage and audit it, as well as maintaining the system to ensure it is protected from IT security risks. For this reason, ScytI proposes that the system be installed and serve an alternate purpose than simply waiting for use in a time of emergency – in that situation the skills to use the service within government may have gone.

The online voting system could be used during electoral events for the collection of votes from the blind, and those overseas, and potentially other groups if so determined. This maintains a skills base in the service and allows the Electoral Commission to build its own risk management processes around it.

ScytI acknowledges that building a system that is unused can be seen by some as an unnecessary use of resource, with an end result that it is not available for an emergency situation – giving the system a dual role as described above avoids this outcome and maximises the chance of a positive return on any investment.

7 Conclusion

And what if it happens again? If another emergency arises, or this one does not wane as fast as expected, will we continue to run elections as we have in the past?

A secure online voting solution can alleviate some pressures on collecting votes in an emergency. The system should be implemented with appropriate staffing and scope to allow it to support defined cohorts of voters so that there are trained teams and maintained systems in place in the event of another or an ongoing emergency.