



EMC Submission No 22

**ScytI Australia Pty. Ltd.**  
Submission to the  
**Parliament of Victoria - Electoral Matters Committee**  
for the  
Inquiry into Electronic Voting

This submission is made on behalf of ScytI Australia Pty. Ltd.,  
a wholly owned subsidiary of ScytI Secure Electronic Voting S.A.  
PO Box 7529,  
Baulkham Hills,  
NSW 2153

Sam Campbell  
Director, ScytI Australia Pty. Ltd.  
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## 1 Introduction

ScytI Australia Pty. Ltd. is pleased to make this submission to the Parliament of Victoria Electoral Matters Committee for the purposes of its 'Inquiry into Electronic Voting'. This submission addresses both parts of the terms of reference, namely:

- the forms of electronic voting currently utilised in Victoria and other jurisdictions and their effectiveness; and
- alternatives that are available that if implemented would ensure the continued integrity and security of the electronic voting system.

This submission will cover the following topics:

- An overview of ScytI – who we are
- Background - ScytI involvement in Electronic Voting projects in Australia
- Measuring effectiveness of electronic voting projects
- Examples from other jurisdictions
- Available alternatives for ensuring the continued integrity and security of the electronic voting system
- Conclusion

Further to this written submission, ScytI will be pleased to respond to any questions the Committee may raise during its enquiry, either to explain this submission further or to respond to other matters as they arise.

## 2 ScytI Overview

### *ScytI background*

ScytI is the global leader in secure election modernisation solutions. ScytI has capitalised on over 18 years of research to develop election-specific cryptographic security technology. ScytI's solutions have been successfully used in over 20 countries throughout the world over the last 10 years, including Canada, the United States, Mexico, Ecuador, France, Norway, Switzerland, Bosnia-Herzegovina, the UAE, South Africa, India and Australia. ScytI is headquartered in Barcelona, Spain with strategic offices in Canada, the United States, Peru, Greece and Australia as well as many additional field offices.

ScytI was formed as a spin-off from a leading research group at the Universitat Autònoma de Barcelona (Spain). This group, funded by the Spanish Government's Ministry of Science and Technology, has pioneered the research on e-voting security in Europe since 1994 and has produced significant scientific results, including over 30 scientific papers published in international journals, as well as the first two European Ph.D. theses on electronic voting security, by Prof. Joan Borrell and ScytI's founder Dr. Andreu Riera (in 1996 and 1999, respectively). This research group also

participated in the first Internet binding election in Europe (i.e., the 1997 election to the Presidency of the IEEE IT Spanish chapter).

One of Scytl's key differentiators is its unique election security technology, which derives from over eighteen years of pioneering R&D and is protected by a portfolio of international patents. The e-voting cryptographic protocols developed by Scytl provide elections with the highest levels of security, in terms of voter privacy, ballot box integrity, and voter-verifiability. Scytl's solutions can also address specific needs of disabled citizens and enable them to participate in elections without any assistance, completely guaranteeing their privacy.

Scytl has customers both in the public and private sectors. The former are local, State (regional), and federal governments which licence Scytl's e-voting products to securely carry out their elections, referenda, voter registration and other electoral modernisation processes by appropriate use of technology. The latter are large corporations and organizations that choose Scytl's technology to carry out electoral/consultation processes such as labour union elections or shareholders' meetings. Some of these customers represent leading references in the electoral modernisation field (e.g., governments in Australia, United States, United Kingdom, France, Austria, Switzerland, Spain, Finland, Norway, and more).

### *Scytl around the world*

Scytl has run numerous projects around the world where its customers are looking to modernise their electoral processes, as shown in the figure below, some of which represent breakthrough projects for the electoral modernisation industry.



Scytl has a strong internal focus on ground breaking research efforts, which is accompanied by a view to assist its customers modernise the electoral process through the appropriate use of technology.

Scytl has used its skills, tools and capabilities to assist the NSW Electoral Commission to deliver the iVote project, and the world's largest Government internet delivered binding election.

### 3 Background - ScytI involvement in eVoting projects in Australia

#### 3.1 Victoria in 2006, 2010

The VEC used a ScytI Voting solution during the 2006 state election. Standalone terminals built from standard PCs and ScytI's e-voting software, was used to allow blind and visually impaired citizens to vote without assistance, supporting up to 12 languages and including special features such as headphones and a specially designed keyboard. The provided solution was thoroughly audited and certified by BMM Test Labs in Australia.

In 2010 an enhanced version of the election system was introduced to support voting using a telephone interface, as well as a centralised back end configuration. Feedback from users was positive, for many it was the first time they were able to vote independently. It was found that "100% of blind and low vision voters sampled stated they were 'highly satisfied' with the service and would use it again."<sup>1</sup>

The Zero project focusses on the rights of persons with disabilities globally, and in 2015 the Zero Project recognised the eVoting implementation for the Victorian State Elections in 2006 and 2010 by awarding a certificate for Innovative Policies and Practices<sup>2</sup> for its outstanding contribution in the support of persons with disabilities in the State of Victoria, Australia. The project was selected from over 250 projects nominated from across the globe.

The effectiveness of the systems used so far in Victoria seem to be largely affected by their physical location rather than any other technology aspects. The votes captured electronically in Victoria so far are shown below.

Year	Number of votes collected
2006 State Election	199
2010 State Election	961
2014 State Election	1,121

#### 3.2 NSW – iVote 2015

The NSWEC utilised ScytI services to implement the iVote protocol for the 2015 State General Election (SGE). Presented below is some information collected as a result of that event:

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<sup>1</sup> <https://www.vec.vic.gov.au/files/ER-2010-Part1.pdf> - Report to Parliament on the 2010 Victorian State Election, p31

<sup>2</sup> <http://zeroproject.org/practice/scytI-secure-electronic-voting-s-a-australia-state-of-victoria/>

- The iVote system was operational for the early voting period, as well as part of Election Day – the 16th March 2015 to the 28th March 2015.
- Number of valid votes collected by the iVote system: 283,669 votes
- Voting channels available: Internet and IVR (telephone interactive response system using DMTF tones via the phone handset).
- Highest number of votes taken in one day: > 50,000
- The day with the highest number of votes: Friday 27th March (the day prior to Election Day)
- Valid voter groups:
  - The Visually impaired
  - Those with a disability
  - Those who live in remote locations; or
  - Those who are going to be outside NSW on Election Day.
- ~97% of users voted 'Very Satisfied' or 'Fairly Satisfied' on their experience with iVote

## 4 Measuring effectiveness of electronic voting projects

In the following section, we take the view that effectiveness is determined by comparison to alternative proposals, in terms of some form of benefit. This is only a qualitative analysis for the purpose of illustration.

### 4.1 Assisting the Blind

The first foray into electronic voting in Victoria was the VEC project in 2006, which specifically targeted the needs of the visually impaired voter. Prior to this voters with a visual impairment were able to use braille ballot paper templates, electronic magnifiers and other items to assist, at centres managed and operated by Vision Australia<sup>3</sup>. These services were available at 4 locations in Victoria, limiting the ability of the voter needing these services to have their needs met. In a similar exercise in NSW it was found that only about 10% of blind people have the ability to read braille.<sup>4</sup>

Anecdotal feedback collected from visually impaired voters has indicated a preference to voting from home, or a location with which they are familiar. This allows the voter to use their own device, which will typically be customised by the voter to support their day to day activities allowing them to concentrate on the process of voting, as opposed to gaining short term familiarisation with a new device or interface.

In order to increase the effectiveness of a solution to assist visually impaired voters, the following factors are applicable:

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<sup>3</sup> <https://www.vec.vic.gov.au/files/ER-2002-Section2.pdf> - Services for voters with a visual impairment.

<sup>4</sup> <http://www.elections.nsw.gov.au/voting/ivote/background>

- Provide the ability to vote from home, or a place the voter is comfortable
- Provide the ability to use technology that the voter is familiar with

Scytl knows that the VEC has worked extensively with stakeholder groups over time to ensure that the each of the systems used support the requirements of the disability groups polled.

A similar analysis holds for voters with other disabilities.

## 4.2 Assisting those who travel

“At the 2014 Victorian state election there were 11 interstate and 32 overseas early voting centres, with 12,872 votes returned from outside Victoria...”<sup>5</sup>. This provides the ability for a voter to vote by attending a polling place – but given the breadth of places a voter may be on holidays or business travel it will be impossible to make overseas polling centres available to all voters.

In order to increase the effectiveness of an electronic voting solution to assist travelling voters, Scytl suggests the following factors are applicable:

- Provide the ability to vote via the internet from a device supplied by the user
- Provide the ability to use technology with which the voter is familiar
- Provide electronic voting by attendance at existing overseas locations using an attendance solution, as this ensures that votes are back at the VEC for counting without waiting for the postal service to return them.

Scytl is aware that the current legislation in Victoria only supports electronically assisted voting by attendance. By extending that legislation, a large number of travelling voters may be re-enfranchised, increasing the effectiveness of a remote voting solution.

## 4.3 Postal voting

With the recent changes to Australia Post pricing structures and delivery timeframes, together with comparable changes happening worldwide, taking the load of voting from the postal service is an area worth analysis. Changes in the postal environment may well be happening faster than the electoral cycle.

During the 2015 NSW State General Election, of the 291,435 postal votes sent to voters, only 203,577 of those were returned in time to be included in the count. The statistics above are from a paper presented to the 2015VoteID conference in Bern Switzerland, based on the NSW 2015 SGE<sup>6</sup>.

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<sup>5</sup> [http://www.parliament.vic.gov.au/file\\_uploads/Electoral\\_Matters\\_Committee\\_-\\_Inquiry\\_into\\_conduct\\_of\\_2014\\_election\\_2fJFzvBP.pdf](http://www.parliament.vic.gov.au/file_uploads/Electoral_Matters_Committee_-_Inquiry_into_conduct_of_2014_election_2fJFzvBP.pdf) - p 26

<sup>6</sup> [https://www.elections.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0019/204058/An\\_overview\\_of\\_the\\_iVote\\_2015\\_voting\\_system\\_v4.pdf](https://www.elections.nsw.gov.au/__data/assets/pdf_file/0019/204058/An_overview_of_the_iVote_2015_voting_system_v4.pdf) - p18

Postal Vote	SGE 2011		SGE 2105	
	Votes	%	Votes	%
Registered but voted some other way	34,709	11.0%	54,736	18.8%
Postal Voted	245,295	77.8%	203,577	69.9%
Registered <b>but did not vote at all</b>	35,178	11.2%	33,122	<b>11.4%</b>
Accepted Postal Vote registrations	315,182		291,435	

With increasing delays occurring in postal services worldwide it could be reasonably expected that an increasing failure rate of postal returned ballots will be observed. ScytI is of the view that effectiveness of postal based voting services are expected to decline over in the medium term outside the control of the electoral commission.

This applies more to council voting than Parliamentary voting due to the heavy reliance on postal voting at the council level.

#### 4.4 The cost of running elections.

Elections are intrinsically expensive events to stage, and have been reported by the Australian Electoral Commission (AEC) in the Commissioners review of 2013 as "... described as Australia's largest peacetime event, an election covers a vast array of complex and interdependent activities..."<sup>7</sup>. The scale of an AEC election exceeds that of the VEC, however the underlying principles are very similar. There are numerous logistical hurdles to overcome, and those hurdles are linked to collecting the electoral intention from specific individual voters, whilst maintaining a voters right to privacy and to make their choice freely.

Those voters who cannot, for whatever reason, attend a ballot box present a situation to an electoral commission where the votes are difficult to collect and become expensive in the context of other votes. Appropriate use of scalable technology to assist in these particularly difficult areas can be used to address these cost concerns. Measuring the effectiveness of a solution in terms of dollar / vote is terminology that many in electoral commissions will understand, and improving that measure is one way of measuring effectiveness on a cost basis.

$$cost\ per\ vote = \frac{capital\ cost + run\ cost}{number\ votes\ collected}$$

In all cases the cost effectiveness of a voting solution is improved either by driving down the costs, or by collecting more votes – in other words – make the solution attractive and best fit the need so that voters capitalise on the investment made by the Government.

<sup>7</sup> <http://annualreport.aec.gov.au/2013/contents/files/1-review.pdf>

### ***Attendance voting solutions***

For an attendance based voting solution, costs increase as a result of the number of devices that are released into the field to be used in polling places, which in turn can reduce the geographic spread and availability of the solution so the voter, based on budgetary allocations. The number of votes collected are affected by such things as availability to the voter, general awareness of the solution, and the number of votes that can be taken on a device in the allocated time.

The cost effectiveness of an attendance based electronic voting solution is tightly linked to the success of the electoral body to be able to place a polling station close to the target voters.

### ***Remote (Internet) voting solutions***

For a remote Internet based voting solution there is a concentrated capital cost associated with the implementation of the voting solution, and this solution is in effect then accessible by anybody. This enhanced accessibility allows for provision of a number of different cohorts of voters.

Taking for example people holidaying overseas, they may be visiting London during the election period and be able to cast their vote in person at Australia House. Alternatively, they may be only just outside London, and be nowhere near a polling booth – in which case their options are a postal vote, or an internet delivered vote if the channel is available.

The cost effectiveness of an internet voting solution is tightly linked to the success of the electoral body in moving voters from another channel to the internet voting channel. By moving voters from existing channels such as postal votes, and attendance at a polling place in a foreign country where real estate is rented to host the election, to a remote voting solution external costs can be minimised.

In general for a remote voting solution the cost per voter reduces as increasing numbers use the service. This is the opposite to what is seen for a postal voting solution.

## **4.5 Assisting those without English as a first language**

Through the use of an electronic voting system the facility can be provided to allow voters to vote in English as well as various other languages. To allow voters to receive ballots in languages other than English would be a huge logistical exercise, possibly creating other issues in the areas of vote interpretation by scrutineers and so forth.

An effective way of allowing voters to vote in privacy and without assistance in a language other than English can be provided through the use of electronic voting. The varying solutions used in Victoria have supported a multi-lingual interface, and ScytI believes electronic voting is the most effective way of providing vote casting services to non-English speaking voters in Victoria. The VEC is highly regarded for driving this aspect of the solutions they have chosen.

## 4.6 Assisting within the polling booth

An issue with which the VEC is contending is the increase of the early vote, and the declaration vote<sup>8</sup>. Early votes are generally not counted in Victoria until the Monday following Election Day. With the use of an electronic voting solution within the major voting centres, ScytI expects the VEC would be able to make savings and enhance security related to the following:

- Logistics regarding the movement of ballot papers following the close of polls
- Management of ballot papers for voters voting outside their district
- Reduction of the need to provide large numbers of ballot papers within the supercentres for voters from other districts.

## 5 Examples from other jurisdictions

In this section ScytI provides an overview of a handful of projects performed by ScytI in other jurisdictions in order to allow the committee to see where and how electronic voting has been used. There are further projects and ScytI would be happy to respond to any questions on these and others.

### 5.1 Norway: Ministry of Local Government & Regional Development

The Ministry of Local Government and Regional Development (MLGRD) is in charge of managing electoral processes in Norway. ScytI's system was authorised by the Parliament for use in 2011 and again in the 2013 elections.

In both 2011 and 2013, Internet voting was offered for early voting for nearly a month prior to Election Day. 17% of registered voters in the pilot districts voted online in 2011. During the second election in 2013, in the 12 districts that used Internet voting, 36% of registered voters voted over the Internet – a significant increase. In 2013, approximately 70,622 voters voted online.

#### **Effectiveness**

The initial primary objective was to implement a secure Internet voting platform to be used in 10 selected municipalities in 2011, where voters were able to cast their votes over the Internet. Following the success of this project the Norwegian government successfully used the platform for the Municipal and County Elections in 2013. The objective of this second election was to consolidate Internet Voting as a reliable voting channel. This time 12 different districts used internet voting allowing 250,000 eligible voters to securely cast their votes electronically

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<sup>8</sup> [http://www.parliament.vic.gov.au/file\\_uploads/Electoral\\_Matters\\_Committee\\_-\\_Inquiry\\_into\\_conduct\\_of\\_2014\\_election\\_2fJFzvBP.pdf](http://www.parliament.vic.gov.au/file_uploads/Electoral_Matters_Committee_-_Inquiry_into_conduct_of_2014_election_2fJFzvBP.pdf) - p37

## 5.2 Canton of Neuchâtel

The Swiss Canton of Neuchâtel has used ScytI's technology to carry out several e-consultations, binding electoral processes, and referenda each year since 2005.

In 2005, an initial solution based on ScytI Online Voting product was delivered and integrated with the Neuchâtel's e-government portal 'Guichet Sécurisé Unique'.

In June 2008, ScytI's solution was selected by the Swiss Federal Government to carry out the first electronic voting process open to the Swiss citizens living abroad.

In 2011, the Canton of Neuchâtel used the opportunity of rebuilding their e-government portal to upgrade to the latest version of ScytI Online Voting, which gave them access to new and enhanced features.

In 2014 a new protocol was implemented by ScytI and integrated to the Neuchâtel's e-government portal. This new solution is based on a next generation e-Voting protocol, providing not only end-to-end encryption but also individual verifiability using advanced cryptographic algorithms based on a system of individual voter's return codes.

The Canton of Neuchâtel owns a full implementation of ScytI Online Voting system. Relevant staff have been trained so that they can configure and manage all their electoral processes. There is usually one electoral event per quarter, including both referenda and elections, which can encompass federal elections, cantonal elections, or communal elections. During these events the Internet voting channel is usually open for fifteen to thirty days prior to the traditional paper-based election or consultation. In some cases over 60% of the votes cast during the process have been electronic.

### *Effectiveness*

By introducing Internet voting, the Canton of Neuchâtel aimed to reduce the costs associated with their electoral processes, while introducing a more convenient and secure channel that would fall in line with the voting tendencies of their citizens, where more than 90% were using postal voting. In 2005 Neuchâtel was one of the Swiss Cantons selected to trial Internet voting, leading the way in electoral modernisation, along with Geneva and Zurich.

The protocol changes introduced in 2014 responded to new regulations on e-voting from the Federal government that would allow the Canton of Neuchâtel to increase the percentage of the population that can vote through this channel from thirty to fifty per cent.

## 5.3 France – Ministry of foreign affairs

The French Ministry of Foreign Affairs selected ScytI, in partnership with Atos Origin, to offer a secure Internet voting platform to French citizens living overseas. This platform has been used three times since its introduction in 2009.

In May 2009, 310,000 French voters residing in Africa and the Americas were able to cast votes over the Internet to elect their representatives to the Assembly of the French living abroad (AFE). Poll-site voting was held on June 7, 2009. The AFE directly elects 12 senators who represent the French living abroad. In October 2010, Internet voting was used again in a by-election involving approximately 40,000 French voters in North-America.

In 2012, the French Parliament (Assemblée Nationale) introduced 11 new seats, who represent the interests of the French citizens living abroad. In May-June 2012 more than 1M electors from around the world were able to vote for their representative. Around 700,000 voters with a valid email address were entitled to vote electronically during 2 weeks from any Internet-connected computer. Poll-site and postal votes were also allowed. The Internet voting platform was available 24/7 to cover the time zone differences between the countries. More than 240,000 votes were cast online. With an impressive 73% of overseas votes in the US and Canada districts being cast online, the 2013 French Legislative Partial Elections represented a significant increase in secure online participation, with over a 65.5 % of votes cast electronically in 2013 vs. 55.5% in June 2012 national legislative election.

In May 2014, the elections to the Assemblée des Français de l'Étranger (AFE) once again leveraged ScytI's secure online voting technology.

Whilst offering electoral services to Government staff, the French Ministry of Education has also offered electronic voting services to all its staff, with 1.3M staff utilising the system in 2011.

### ***Effectiveness***

The objective of the French Ministry of Foreign Affairs was to address the difficulties that overseas citizens have when voting. A limited number of polling places abroad and the unreliability of foreign mail services have traditionally resulted in a very low turnout. The objective of using Internet voting was to enfranchise more overseas citizens in the Country's democratic process, while at the same time simplifying logistics, cutting costs, increasing security, whilst protecting voter privacy. All these objectives have been accomplished.

## **5.4 United States – State of Florida**

During the November 2008 US Presidential elections, certain absentee voters from Florida were given the chance to vote from special voting terminals connected to the Internet. In 2007, after the Secretary of State in Florida modified the law concerning electoral processes in the State of Florida, the county of Okaloosa allowed its overseas voters, civilians and military personnel, to cast their vote over the Internet. Among these characteristics that were preferred by the state are ScytI's vote receipt functionality (namely the possibility for the voter to check afterwards that his/her vote has been counted). The solution was implemented and used for the U.S. Presidential election in November 2008 in the county of Okaloosa.

The State of Florida certified ScytI's Internet voting technology. To date, ScytI Pnyx is the only Internet voting solution certified in the USA.

**Effectiveness**

The objective of the State of Florida and Okaloosa county was to address the difficulties that the State’s overseas citizens have when it comes to participating in the country’s electoral processes. The e-voting solution selected by the State allowed voters to cast their votes securely across the internet on poll-site voting terminals set-up in various countries around the world.

**6 Available alternatives – for ensuring the continued integrity and security of the electronic voting system**

There are some alternative solutions to the current vVote system in use in Victoria that could increase the effectiveness of electronic voting, whilst maintaining the high standards of integrity and security that have been in place with the VEC over an extended period. These solutions do fall into two profiles, as mentioned earlier – attendance voting and remote voting.

Both of these profiles are met in different ways by the iVote protocol from NSW, or various other products produced by Scytl, and of course our competitors.

**6.1 Solution alternatives**

Presented below is a table that shows the two solution profiles, and matters that could be addressed by their use. The list is not exhaustive.

Solution	Addressed areas
<b>Attendance based electronic voting</b>	<ul style="list-style-type: none"> <li>• Multi lingual solution</li> <li>• The “Town Hall” issue - Declaration votes</li> <li>• Early votes</li> <li>• Voters with disabilities</li> </ul>
<b>Remote electronic voting</b>	<ul style="list-style-type: none"> <li>• (those above)</li> <li>• Postal votes</li> <li>• The traveller</li> </ul>

The Town Hall issue above is the situation where the Town Hall, or the primary voting centre in an electoral region, often carries all the ballot papers for all regions. This leads to a logistical issue with printing an oversupply of ballot papers to allow these voting centres to have spare papers for all regions. By having an attendance based electronic voting solution in these location, this issue would be overcome. In addition – the vote could be included in the count on the night and remove that layer of logistics.

## 6.2 The iVote System

This document will not fully describe the iVote protocol, as substantial information is available in the public domain on the topic hosted by the State of NSW. The detailed specifications are available on the NSWEC website<sup>9</sup>, as well as a conference paper that was prepared by ScytI and NSWEC staff<sup>10</sup>.

In essence the iVote protocol is a secure remote voting solution delivering voting services over the internet to the voter. The protocol is designed to assist the voter in understanding how their vote is captured and processed in a way that is comprehensible by most electors. This leverages a combination of the strong cryptography on which the system is based, the segregation of groups of people who operate the system and the processes around it. The system is designed to be auditable to allow the public to have confidence that their vote was Cast-as-Intended.

The iVote system implemented in NSW collects votes securely from the voters device (laptop, mobile, tablet, telephone) and transmits them via the internet to the NSW hosted electronic ballot box. The voters had the option of verifying their votes within the system to ensure their intention is properly recorded (Cast-as-Intended). The voter could then validate that their vote was decrypted by the system.

The iVote system comprises a number of components, including the Registration System, Audit and Verification Systems and the iVote Core Voting System (the iVoteCVS). ScytI was contracted by the NSW Electoral Commission (NSWEC) to produce the iVoteCVS, the component of the iVote system concerned primarily with the following functions:

- Collection of the vote (web, mobile and IVR interface)
- Storage of the vote
- 'Mixing' of the vote
- Decryption of the vote
- Publishing of the vote to NSWEC business systems
- Publishing of the vote receipt numbers

A key difference between the iVote system in use in NSWEC and the vVote system in Victoria is the availability of a printed receipt for a ballot. The vVote system provides a receipt to the voter that allows them to be comfortable that their ballot was recorded as cast in accordance with the Prêt à

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<sup>9</sup> [http://www.elections.nsw.gov.au/about\\_us/plans\\_and\\_reports/ivote\\_reports](http://www.elections.nsw.gov.au/about_us/plans_and_reports/ivote_reports) ->iVote SGE 2015 Specifications

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[https://www.elections.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0019/204058/An\\_overview\\_of\\_the\\_iVote\\_2015\\_voting\\_system\\_v4.pdf](https://www.elections.nsw.gov.au/__data/assets/pdf_file/0019/204058/An_overview_of_the_iVote_2015_voting_system_v4.pdf)

Voter protocol used. The iVote protocol supports this functionality albeit in a different way leveraging the fact that it is an internet delivered service.

An advantage of a remote electronic voting solution, is that it can be configured and used as an attendance based electronic voting solution – simply secure the avenues through which the voter can access the system. The end point for the iVote system is the users laptop, desktop, tablet or mobile phone device.

ScytI could make the iVote system an alternative for the Victorian Government by providing a version of the protocol that is configured for an attendance based solution that we believe would be in accordance with current legislation. In order to make this an attendance solution the VEC would be required to provide voting devices, which might be a commodity tablet device, and deliver the service through an alternate network to ensure that the iVote service was not connected to the internet.

As stated above the key difference between vVote and iVote is the voters receipt supplied to the voter at the time of voting. A modification to the receipt mechanism of the iVote protocol to support printers in an attendance solution would maintain that level of integrity that the Victorian Government expects based on the experience with vVote.

## 7 Summary

From the many projects that ScytI has worked on, and the experiences collected during a large number of electoral events, we have observed that the most successful electronic voting projects are those where a specific problem is recognised, targeted and solved.

In running elections there are votes that are easy to collect – those in populated areas on polling day – and those that are hard to collect. A hard to collect vote might be from the visually impaired voter who wants to vote and can't leave home and has an expectation of privacy. A hard to collect vote might be from a voter who is overseas and cannot pin down the address he will be at, in order to receive his postal vote in sufficient time to be able to reflect and evaluate his electoral opinion and get it back to the Electoral Commission in time to be counted. Hard to collect votes are also expensive votes – expensive in terms of dollars per vote, and expensive in terms of the disenfranchisement of the individual.

Currently the legislation for the State of Victoria doesn't support electronic voting from outside a polling booth. There are however some hard to collect votes that may benefit from the use of the iVote if it were made available to the voter when attending a polling place, such as declaration votes taken during the early voting period. If an attendance voting solution could collect all declaration votes in addition to the votes from the overseas voting centres, you can accelerate the inclusion of those votes into the count, and drive down some of the costs associated with that cohort of voters.

## 8 Conclusion

ScytI is pleased to present this document to the Victorian Parliamentary Committee for Electoral Matters, and to have worked in the past with the Victorian Electoral Commission and more recently with the NSW Electoral Commission to deliver electronic voting solutions to each of the respective governments - each solution displaying their security capabilities in different manners, whilst demonstrating a flexibility to tune ScytI capabilities to suit the specific requirements of the varying governments, whilst not compromising the security of the solutions.

Based on ScytI knowledge of elections conducted over the internet, ScytI have stated that the NSW State General Election in 2015 is the world's largest binding government election to date. This allowed the collection of votes from electors who would otherwise have struggled to meet their legislated requirement of casting a ballot in a secure manner, a similar cohort exists in Victoria whose needs could be more easily met by variations to the existing legislative framework.

With ScytI, the technology is here now.