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Honourable Committee Members,

re: *Inquiry into and report on all aspects of the conduct of the 2016 Federal Election and matters related thereto.*

Thank you for the opportunity to present our recommendations to the Joint Standing Committee on Electoral Matters. We have prepared this submission to address Terms of Reference point 1(d) *The potential application of new technology to voting, scrutiny and counting, with particular reference to its application to remote voting, ADF personnel on deployment and supporting vision-impaired voters.*

Dominion Voting Systems is a North American election technology and services provider. World-wide we assist over 1,200 jurisdictions to conduct transparent, timely and secure elections. We employ more than 200 election professionals and our company history reaches back to the first election technology firm founded in 1895. We offer a full range of products that assist voters and election commissions to capture, scrutinize and tally votes. These include centralized optical scan ballot counters, precinct based optical scan ballot counters, direct recording electronic (DRE) voting terminals, and remote voting (internet and telephony) voting solutions.

Recommendations:

1. Australia adopt electronic ballot counting to improve the transparency, accuracy and speed of the electoral process.

Publically scrutinized paper ballot tally procedures have traditionally been the most reliable and trusted means of determining the outcome of an election. In spite of this, manual counts are time consuming and prone to errors.¹ The frequency of these errors increases with ballot complexity. The combination of complex ballots and late night counting can compound errors and delays. Electronic ballot counting offers equivalent levels of security, transparency, and anonymity while providing results in a timely manner. In addition, electronic ballot counters process ballots with complete accuracy. Transparency is further enhanced by the use of optical scanners that capture and retain images of each ballot scanned. The ability to distribute images of all ballots from an election allows all stakeholders to conduct a full recount at their convenience.

Optical ballot scanning can be done locally or centrally at designated depots. We advocate the use of ballot counting devices located at each voting location and affixed to election ballot boxes. The voter completes the necessary process to obtain a ballot, and proceeds to mark it in a traditional manner. The voter then casts the marked ballot in an optical scan tabulator where it is processed and deposited into the secure ballot box. At the conclusion of the voting period the poll is closed, and the tabulator generates a results report.

¹ http://chil.rice.edu/research/pdf/GogginByrneG_12.pdf

This approach has a number of advantages. Paper based systems are:

- Familiar - Voters understand paper ballots, easing the adoption of new technology.
- Transparent - The voter's ballot is the official record of vote cast, audit is easily explained and conducted.
- Efficient – the number of electors voting is not limited by the number of systems in use at a poll location; a single tabulator can accommodate more than 2,500 voters on a typical election day.
- Failsafe – because paper ballots are the record of vote cast, in the event of any irregularity a hand tally can be conducted.
- Local – by tradition, most elections require that votes are tallied locally before being reported. In addition, reduced handling speeds results and eliminates opportunity for ballot tampering.

Central count optical scan tabulation systems operate in a similar manner, but large numbers of ballots are processed through high-speed scanners by trained operators. Central count solutions are suitable for election where large numbers of voters cast their ballot through the post, or where highly concentrated populations reduce the time required for ballots to be transported to a depot at the end of the voting period. In many cases our customers combine a central count system to tally postal, absentee and early vote ballots with precinct tabulation used on Election Day. We recommend that this practice be adopted.

Some jurisdictions prefer DRE systems. In jurisdictions where there is not a demand for paper ballots, administrators have option of using systems designed around direct voter input. Where a jurisdiction has frequent elections the costs savings associated with eliminating paper ballots offsets the increased capital cost of DRE system acquisition making it a practical alternative. In jurisdictions with complex elections electronic voting systems can assist the voter to navigate through the choices, reducing marking errors.

We provide remote voting solutions to many customers. Typically these customers have constituencies that place a high value on the convenience of remote voting. Australia's compulsory voting combined and postal ballot system eliminates the need for remote voting. When choosing to adopt an election system it is important to consider that both remote and DRE voting systems suffer from *perceived* security vulnerabilities. DRE and remote voting products manufactured and supported by experienced, reputable vendors offer highly secure and convenient options for voters. However, in elections where the mandate of the winner is stems from the perceived legitimacy of the election outcome the use of these systems is only justified when their use provides benefits that cannot be obtained by other means.

2. Provide ballot marking devices to offer the benefits of a DRE voting system

Electronic ballot marking devices compatible with a ballot counter are frequently requested by our customers. This system combines the advantages of touch-screen voting with the transparency and security of a traditional paper system. In this approach a touch-screen device guides voters through the contests, assisting them to indicate their choices. When voting is concluded a paper ballot is printed. This ballot displays the choices of the voter in plain language allowing the voter to verify that his choices are correctly reflected. The ballot is then cast in a ballot box for tally. Because the ballot marking device does not store the

choices of an individual, it is feasible to “activate” each ballot marking terminal with the personally identifiable information contained on a voter register ensuring that an individual voter may only cast a single ballot.

An additional benefit of ballot marking devices is that the need for advance ballot printing and distribution is eliminated. Ballot marking devices are compatible with optical scan vote counting systems allowing phased implementation of assistive technology. In this scenario, an optical scan system can be implemented, and compatible ballot marking devices can be added at a later date.

3. **Provide devices to assist voters with physical, sensory, or cognitive disabilities to mark a paper ballot independently**

The United States Election Assistance Commission is a world leader in automated electoral standards, and has developed a set of guidelines used by manufacturers for devices to assist voters with physical, sensory, or cognitive disabilities.² Put simply, these requirements require that all voters be able to mark, review and cast their ballot without assistance. Optical scan tabulators and ballot marking devices compliant with these requirements are commercially available and in wide use. Audio or audio-visual devices provide ballot information to voters who indicate their choices with audio-tactile interfaces, paddles, sip and puff instruments, or an alternative device. A paper ballot is then generated and cast in the normal manner. If the ballot marking device is used in a poll location where voters are given the option to hand mark their ballot, random marks can be used to reduce the ability for the ballot to be identified.

4. **Use secure communications platforms to allow election-night Instant Runoff tally of all ballots.**

Combining optical scan systems with communication technology allows the creation of a central results database. At the close of polls results are electronically sent to the Election Commission Headquarters and combined with all other results. This allows the election database to conduct instant runoff by combining votes from all vote types and vote locations, including those cast and tallied overseas. Results transmission technology is widely used³ and has been extremely effective in reducing implications of results uncertainty following the close of polls. Security is provided through the use of advanced encryption protocols, undisclosed proprietary file structures, private or virtual private networks, IP address filtering. Communications systems allow all transmitted results to be reviewed prior to inclusion in the final database. Based on our experience it would be reasonable to expect that provisional results could be available within 2 hours.

² https://www.eac.gov/assets/1/workflow_staging/Page/124.PDF

³ <http://www.idea.int/elections/ict/field.cfm?field=496>

5. Electronically distribute postal ballots to remote voters and ADF personnel

Technology that allows the electronic distribution of ballots is in widespread use⁴. When permission to cast a postal ballot is granted by the relevant authority a portable document format (PDF) image of the ballot is sent electronically to the recipient. This ballot is printed by the recipient, marked and sent to a designated counting center. All required declarations and identify verifications are included in the same manner as a postal vote. These ballots can then be processed using high speed central count optical scanning systems. At the conclusion of processing results are transferred to the central results database allowing Instant Runoff to take place. Small, simple versions of these systems can be used in most any location providing the ability to include results from locations where traditional postal ballots are not feasible.

Some jurisdictions allow postal ballots to be marked and returned electronically⁵. This differs from remote voting as the voter's choices are not directly entered into a results database. Each ballot is printed (or in some cases replicated) and counted using an optical scanner. This differs from internet or telephony based voting systems because no there is no direct connection between the voting system and the counting system.

We make our recommendations based on our understanding of the 2016 Australian Federal Election, and with reference to technology currently in use that could improve the Australian election experience. Utilizing proven approaches can simplify the voting process and deliver timely, transparent election results. We believe that adoption of these recommendations would provide a significant benefit to all Australians and would demonstrate Australia's enduring commitment to the democratic principles it was founded upon.

Dominion Voting is available at the convenience of the Committee to provide additional information. Thank you for your consideration.

⁴ <http://www.ncsl.org/research/elections-and-campaigns/internet-voting.aspx>

⁵ <http://www.ncsl.org/research/elections-and-campaigns/internet-voting.aspx>