



**ELECTORAL  
COUNCIL  
*of* AUSTRALIA**

# **Automated Telephone Voting**

## **Australian Electoral Industry Standard**

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# Industry Standard Automated Telephone Voting

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# Industry Standard Automated Telephone Voting

## Part 1

### 1 Preface

This document addresses Automated Telephone Voting technologies and provides a set of requirements and guidelines for use by Australian Election Management Bodies (EMBs) for their design, deployment and operation for Australian parliamentary, local government and industrial or commercial elections.

### 2 Introduction

- 2.1.1 This Standard has been developed by a Working Group comprising members of the Electoral Council of Australia (ECA) and community representatives and with assistance from a telephony usability expert.
- 2.1.2 The Standard was funded and developed under the sponsorship of the Australian Electoral Commission (AEC). The AEC appreciates and acknowledges the input and assistance provided by the Australian Human Rights Commission, ECA members, Vision Australia, Blind Citizens Australia and The Australian Blindness Forum.
- 2.1.3 Special thanks to the Australian Bankers' Association for allowing us to incorporate content from the 2001 Australian Telephone Banking Standard.

### 2.2 Intended Audience

- 2.2.1 This Standard is to provide guidance to EMBs, where possible, to ensure an intuitive and similar voting experience for the voter, regardless of the election in which they are voting.

### 2.3 Purpose

- 2.3.1 The Electoral Council of Australia sought to standardize the usability of technology that is being developed in different Australian Electoral Management Bodies (EMBs) in response to increasing public need and commercial and parliamentary requirement. Telephone Voting brings added benefits of accessibility that technology can bring to voters who previously relied on assistance to mark the ballot paper.
- 2.3.2 The Standard was initially instigated in an effort to regularize the voting experience for people who are blind or have low vision, but it is recognized that this approach is applicable to anyone who is able to hear and comprehend spoken instructions and activate a telephone keypad. The assembled working party concluded that when voting using a telephone voting system, that all voters will be casting a vote without the benefit of being able to see the ballot paper.
- 2.3.3 This Standard addresses issues of usability and navigation while also ensuring that Australian electoral principles are observed and not diluted by the introduction of technology.
- 2.3.4 The work conducted by other groups and standards bodies, including the Australian Bankers' Association (ABA), Standards Australia, the US Voluntary Voting System Guidelines group (VVSG), the Human Factors and Ergonomics Society (HFES), Ameritech, US Access Board, ACIF and others, has assisted in formulation of the content of this document.
- 2.3.5 In formulating these guidelines, the Working Group has sought to incorporate the best information and guidance from available sources, as well as new research.



- 2.3.6 This document should be read in conjunction with AS/NZS 4263: 2003 - Interactive voice response systems—User interface—Dual tone multi frequency (DTMF) signalling.

### 3 References

- 3.1.1 Commonwealth Joint Standing Committee on Electoral Matters - Report on the conduct of the 2007 federal election and matters related thereto
- 3.1.2 Automated Telephone Banking Industry Standard. Australian Bankers' Association (2001) online at <http://www.bankers.asn.au/Default.aspx?ArticleID=344>
- 3.1.3 Australian Banking Association's Guiding Principles for Accessible Authentication. Online at <http://www.bankers.asn.au/Industry-Standards/default.aspx>
- 3.1.4 Scrutiny of Acts and Regulations Committee. 55<sup>th</sup> Parliament. Inquiry into Electronic Democracy. Online at <http://www.mmv.vic.gov.au/Assets/576/1/eDemocracyReport.pdf>
- 3.1.5 "Meeting the Needs of Older Adults in Speech Application Design", Daryle Gardner-Bonneau, Principal, Bonneau and Associates
- 3.1.6 "Telephones for All", Nordic Committee on Disability, Nordic design guidelines
- 3.1.7 "The Telecommunications Charter", COST 219 bis, National Research and Development Centre for Welfare and Health (STAKES), European Union, <http://www.stakes.fi/cost219/charter.htm>.
- 3.1.8 AS/ACIF S002:2001 Analogue interworking and non-interference requirements for Customer Equipment for connection to the Public Switched Telephone Network
- 3.1.9 AS/ACIF S040:1999 Australian Standard - Requirements for general use Customer Equipment for use with the Standard Telephone Service – Features for special needs of persons with disabilities
- 3.1.10 AS/NZS 4263: 2003 - Interactive voice response systems—User interface—Dual tone multi frequency (DTMF) signalling
- 3.1.11 Designing User Friendly Interactive Voice Response (IVR) Telephone Services for all. (1998) SoftSpeak Computer Services <http://www.softspeak.com.au/ivrpap98.htm>
- 3.1.12 Draft Information and Communication Technology (ICT) Standards and Guidelines, Published in the Federal Register on March 22, 2010. <http://access-board.gov/sec508/refresh/draft-rule.htm#i903>
- 3.1.13 HFES 200.4 Software User Interfaces – Interactive Voice Response (IVR) and Telephony Human Factors and Ergonomics Society
- 3.1.14 VVSG (Voluntary Voting System Guidelines) Recommendations to the EAC. The US Election Assistance Commission - Technical Guidelines Development Committee: 2007

### 4 Disclaimers

- 4.1.1 This document is based in part on the local and international research on best practice in the design, deployment and operation of voice-output electronic voting approaches, as well as Automated Telephone solutions which were available at the time of publication. Future versions of the document will endeavour to incorporate the latest research.
- 4.1.2 As material in this document was developed by the Working Group some of which is drawn from a number of other sources, it should not be distributed outside election management bodies without permission from the Electoral Council of Australia. It may however be referred to in tenders, requests for expressions of interest and requests for proposals, without permission, where interested organisations are seeking to adopt its requirements.



- 4.1.3 There are many liability and other legal issues relating to matters covered in this Standard, the resolution of which falls outside the scope of the document. These include:
- 4.1.3.1 Conditions of use (eg, proxy relationships, determinations of breaches)
  - 4.1.3.2 PIN and Voting Identification Number entry (eg, inability to enter PIN, PIN replacing signature)
  - 4.1.3.3 PIN disclosure
  - 4.1.3.4 Disclosure of user IDs and passwords
  - 4.1.3.5 Strategies for avoidance of fraud
  - 4.1.3.6 Compliance with Commonwealth Electronic Transactions Act
  - 4.1.3.7 Compliance with the Commonwealth Privacy Act 1988 (which incorporates the amendments made to it by the Privacy Amendment (Private Sector) Act 2000).
  - 4.1.3.8 Any electoral legislation that may be governing the particular ballot that is using Telephone Voting.
- 4.1.4 This Standard does not replace legislation and where there is a conflict between legislative requirements and this Standard, the legislation must take precedence.
- 4.1.5 Although the intended primary application of this Standard is stated in its Scope (see below, Section 7), it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purposes.
- 4.1.6 The Standard ought not to be relied upon as a substitute for professional advice in complying with the law, and it is recommended it be implemented and assessed under the guidance of experienced usability professionals.
- 4.1.7 The Electoral Council of Australia, and all other parties associated with the publication of this document have made every effort to ensure the accuracy of information, but accept no responsibility for any loss or damage occasioned by any party in its seeking to implement any provision of the Standard.

## 5 Force of Document

- 5.1.1 This document is an Industry Standard: a set of standards and guidelines for the design, deployment and use of Automated Telephone Voting services for the Voting and Elections industry. The adoption of Industry Standards is voluntary.
- 5.1.2 This Standard does not have the force of law and adopting the Standard does not guarantee fulfilment of legal responsibilities under the Disability Discrimination Act (DDA), nor does it remove from any institution their obligation to comply with the requirements of that Act or any other relevant legislation.
- 5.1.3 The Standard has been developed in consultation with interested parties, including the Australian Human Rights Commission with the objective of describing best practice in accessibility consistent with the DDA. An organisation choosing to adopt the Standard may therefore have some confidence that they are implementing requirements which have evolved from community consultation with interested parties and Australian electoral management bodies. The adoption of the Standard will carry some weight as a defence against a complaint lodged under the DDA.

## 6 Definitions

- 6.1.1 For the purpose of this Industry Standard, the following definitions apply:
- 6.1.2 **Automated Telephone Voting service** – voting in an election is made available to the voter using a telephone. The voting session can be completed independently by the voter.
- 6.1.3 **Caller** - a voter registered for telephone voting who calls the system.



- 6.1.4 **Command** - a DTMF input from a user that controls an IVR system. Examples of commands are Help, Stop, Skip, Back-up and Exit. A command is not a response to a menu of choices or to a data input request. A command is usually a single key-press.
- 6.1.5 **Data input** - a sequence of DTMF tones input by a user to convey information such as credentials, numbers, values, times and names. Data input may be of variable or fixed length such as a PIN.
- 6.1.6 **Disability** – the use of this term in the Standard relies on the DDA definition which includes:
- 6.1.6.1 Physical
  - 6.1.6.2 Intellectual
  - 6.1.6.3 Psychiatric
  - 6.1.6.4 Sensory
  - 6.1.6.5 Neurological
  - 6.1.6.6 Learning disabilities
  - 6.1.6.7 Physical disfigurement
  - 6.1.6.8 The presence in the body of disease-causing organisms.
- 6.1.7 **Dual tone multi frequency (DTMF) Signalling** – also termed Touchtone, a system for transmitting address and other information from terminal equipment by superimposing a succession of voice frequency signals on the established DC current in a PSTN line. Each signal comprises two simultaneously transmitted tones of different frequencies. Up to 16 different signals may be transmitted by standard DTMF signalling (in Australia, see ACIF S002: 2001). Almost all telephones are limited to 12 keys and hence 12 signals. The 12 standard keys are 1, 2, 3, 4, 5, 6, 7, 8, 9, \*, 0, and #. The four additional keys (not normally provided on a telephone) are referred to as A, B, C and D.
- 6.1.8 **EMB** – Election Management Body that is responsible for the administration of the election.
- 6.1.9 **Feedback** - information supplied by the system to indicate that user actions have had their intended effects. Typically, feedback consists of a spoken prompt indicating that an action has had its intended effect, but feedback may also include error indications and tones.
- 6.1.10 **First Past the Post/Plurality Voting** - the candidate who polls the highest number of formal votes is elected– even if that number is less than 50% of the formal vote.
- 6.1.11 **Group Voting Ticket (GVT)** - some electoral systems allow for a political party or group to register a replica of the ballot paper showing how the preferences will be distributed if the voter chooses to vote using the ticket voting method. When the voter chooses to ticket vote, the EMB will then distribute the preferences according to the GVT that has been lodged with the EMB prior to the commencement of voting.
- 6.1.12 **How to Vote Card (HTVC)** – An instruction that contains details about a candidate or party as well as instruction on how to cast a vote in the manner that the issuer of the how to vote card wants the voter to follow.
- 6.1.13 **Australian Human Rights Commission** - formerly HREOC (Human Rights and Equal Opportunity Commission) The Australian Human Rights Commission administers federal legislation in the area of human rights, anti-discrimination, social justice and privacy. This includes complaint handling, public inquiries, policy development and education and training.
- 6.1.14 **Informative** - the term `informative' has been used in this Industry Standard to define the application of the appendix to which it applies. An `informative' appendix (if included) is only for information and guidance.



- 6.1.15 **Interactive voice response (IVR) system or service** - an automated telephone-based system or service that allows users to enter information and make menu selections using DTMF devices, and to receive audible information. Examples include Automated Telephone Voting, Telephone Banking and bill pay (Bpay) services. IVR system output is presented as audible signals or voice (whether live, recorded, digitised or synthesised) carried over an interactive telecommunications medium (whether public or private or a combination of both, or whether wired or wireless) including the PSTN or ISDN.
- 6.1.16 **IVR provider** – an organisation that develops and/or operates IVR services, for example, an Electoral Commission or 3<sup>rd</sup> party provider.
- 6.1.17 **Interrupt capability** - the ability to interrupt system output with valid input.
- 6.1.18 **May** – indicates the relative importance of a requirement. “May” follows “should” in importance in this Standard.
- 6.1.19 **Menu** - the presentation to the user of a list of possible actions. A menu typically comprises a set of prompts each describing an available function and the user action necessary to invoke that function.
- 6.1.20 **National Relay Service (NRS)** - in Australia, the National Relay Service is contracted to provide access to the telephone network between people who have a hearing or speech impairment or who are Deaf and the wider community. The NRS can be accessed by a teletypewriter (TTY), computer and modem or standard telephone. A Relay Officer (RO) is involved to facilitate all calls. Relay Officers are bound by Commonwealth laws to keep all calls confidential. .
- 6.1.21 **Non Preferential Voting** – often used in First Past the Post Voting. Where the voter marks one or more squares to indicate the candidate(s) they wish to vote for.
- 6.1.22 **Operator** – a person who is available to assist a caller of an IVR service. An operator service may not necessarily be available 24 hours a day, or 7 days a week.
- 6.1.23 **Overvoting** - an overvote occurs when a person has voted for more than the maximum number of selections allowed in a ballot. The result is an informal vote which cannot be included in the final result.
- 6.1.24 **Culturally and Linguistically Diverse (CALD)** – anyone for whom English is not their first spoken or written language. People of a non-English speaking background often benefit from plain English writing, and may prefer spoken English to written English.
- 6.1.25 **Plain English** – language that is written as clearly and simply as is appropriate for the content. Clear and simple writing will aid all users, especially those with cognitive, learning, and/or reading disabilities. This should not discourage the writer from expressing complex or technical ideas. Using clear and simple English also benefits people whose first language is not English, including those people who communicate primarily in sign language.
- 6.1.26 **PIN** – Personal Identification Number. A number provided by the voter to the EMB to be used in accessing the system. The PIN must be numerical, be 4-6 digits and must not commence with a zero as the zero key is reserved for help from anywhere within the system.
- 6.1.27 **Preferential Voting** - voters indicate an order of preferences for candidates on the ballot paper. eg. who they want as their 1st choice, 2nd choice and so on.
- 6.1.28 **Full preferential voting** - the elector must show a preference for **all** candidates listed on the ballot paper. In some electoral systems which use full preferential voting, the voter can leave one box empty if the voter's intention with regard to the other preferences is clear. The empty box is treated as the voter's last preference
- 6.1.29 **Optional preferential voting** – only the number "1" preference must be shown and other preferences may be indicated.



- 6.1.30 **Partial Preferential** - the elector must show a minimum number of preferences as per the instruction on the ballot paper.
- 6.1.31 **Prompt** - an audible system output that instructs or guides the user. A prompt may consist of recorded voice, synthesised speech, tones, sound effects or any combination of these.
- 6.1.32 **Public switched telephone network (PSTN)** - that part of the public telecommunications network which enables any customer to call and communicate with any other customer either automatically or with operator assistance, normally associated with a landline (wired) telephone service. The PSTN has a nominal transmission bandwidth of 3 kHz (in Australia, see ACIF S002: 2001).
- 6.1.33 **Robson Rotation of candidate names** - a process of rotating candidate names within a column so that favoured (top and bottom) positions are shared equally between all candidates.
- 6.1.34 **Shall** – indicates the relative importance of a requirement. “Shall” is of the highest importance in this Standard.
- 6.1.35 **Should** – indicates the relative importance of a requirement. “Should” follows “Shall” in importance in this Standard.
- 6.1.36 **System** - an interactive voice response (IVR) system.
- 6.1.37 **Telephone Relay Service** - a telecommunications service that enables text telephone users and voice telephone users to interact by providing translation between the two modes of communication. This translation is normally provided by a human operator. See National Relay Service.
- 6.1.38 **Timeout** - an interval of time where there is no user input, which causes the system to change state; or, the state change resulting from such an interval. For example a timeout may result in information being repeated or more details being offered to the user, the call being transferred to an operator or the vote being cancelled and reset.
- 6.1.39 **Text Telephone** - the generic term commonly used to describe a device used to perform text telephony whether through Baudot, DTMF, ASCII or other methods used in various countries throughout the world. Such devices are usually used by at least one party who has a hearing impairment. It could be a stand-alone unit or as an addition to a voice telephone or as an application in a multi-function computer based terminal.
- 6.1.40 **TTY**: one name that Australian and North American (Baudot-based) text telephones are commonly known by. The deaf community in Australia has adopted the term "TTY" as a common usage name for text telephones. TTY text telephones use the Baudot system to communicate across the telephone network.
- 6.1.41 **User ID** – the number which identifies the user and their accounts to the system.
- 6.1.42 **User Interface** - the term used to describe the methods and equipment by which people and technology interact. User interface includes the output and input formats that programs generate and recognise. .
- 6.1.43 **Voter** – a person who has enrolled with the managing EMB and has subsequently registered for Telephone Voting in order to use this service.
- 6.1.44 **Voter Identification Number (VIN)** - a term sometimes used for User ID in electronic voting systems. See User ID.



## Part 2

### 7 Scope

- 7.1.1 This Industry Standard is intended for use by manufacturers, suppliers and designers of Automated Telephone Voting services and by EMBs providing Automated Telephone Voting services through the use of interactive voice response (IVR) technology.
- 7.1.2 This Standard does not attempt to standardize the software to be used or the security around that software, but instead provides guidelines to the EMB and to software developers to bring a consistent and familiar experience to Australian voters using telephone voting services.
- 7.1.3 The Standard principally relates only to automated telephone services and does not extend to direct communication between a customer and an employee of an EMB, other than by specifying requirements which may enable a user to gain access to a human operator from within the IVR system or general guidance on telephone voting registration.
- 7.1.4 Whereas AS/NZS 4263 is confined to generic user interface guidelines for automated telephone services, this document specifically deals with telephone applications relating to voting in elections.
- 7.1.5 As this Industry Standard is supplemental to AS/NZS 4263, in most instances it does not duplicate information appearing in that document. It is therefore essential that AS/NZS 4263 be read in close conjunction to this document or instructions found in this standard will be incomplete and insufficient to implement a telephone voting system.
- 7.1.6 The primary focus for this document is on automated IVR systems, not Automatic Call Distributor (ACD) systems or Auto Attendant 'front ends'.
- 7.1.7 This Industry Standard in the first instance specifies requirements, guidelines, recommendations and suggestions for Automated Telephone Voting services to make them more accessible to people with disabilities and for rural and remote Australians. Nothing in this standard should technically preclude the use of such telephone voting services by anyone who has the capacity to hear and comprehend the spoken messages and activate keys on a standard touchtone-capable telephone device.
- 7.1.8 This Standard also covers application, processing and service content issues where they relate to Automated Telephone Voting.
- 7.1.9 This Standard does not address vote counting methods, instead it addresses only the functionality required for the voter to be provided with sufficient information and guidance to cast a valid vote.
- 7.1.10 This technology assumes a voter with the capacity to hear recorded voice messages and the ability to operate a telephone keypad, or to be able to generate DTMF tones as telephone input.
- 7.1.11 Telephone Voting Systems shall be designed to accept DTMF input. It is a requirement that the telephone or telephone device being used for telephone voting is capable of generating DTMF signalling (often termed touchtone) and that it is not set to the out dated decadic (click) signalling mode. A small number of older landline phones may not support touchtone signalling and others may still be set to the older decadic signalling mode. In either case, they will not be compatible with automated telephone voting or most current IVRs, unless set to touchtone operation.
- 7.1.12 This potential issue may need to be raised in literature and in trouble-shooting procedures.
- 7.1.13 Nothing in this document is intended to prevent the use of designs or technologies as alternatives to those prescribed below, provided they result in substantially equivalent or greater access and user experience of telephone voting.



## 7.2 Overview of Automated Telephone Voting Usability Challenges

- 7.2.1 Derived from: VVSG Recommendations to the EAC 2007
- 7.2.2 The importance of usability and accessibility in the design of voting systems has become increasingly apparent. It is not sufficient that the internal operation of these systems be reliable; in addition, voters and election officials must be able to use them effectively and efficiently. There are some properties of voting systems that make good design especially difficult:
  - 7.2.2.1 The voting task itself can be fairly complex; the voter may have to navigate an electronic ballot, choose multiple candidates in a single contest, understand the effect of ticket voting versus preferential voting, or decide on referendum questions written in legal language;
  - 7.2.2.2 Voting is performed infrequently (compared with tasks such as using telephone banking or an ATM), so there is relatively limited opportunity for voters and polling officials to gain familiarity with the process.
  - 7.2.2.3 Changes in the election process, including new voting systems, may require voters and polling officials to use new and unfamiliar procedures; and
  - 7.2.2.4 Voters who register to use the telephone voting equipment are exceptionally diverse. The voting public encompasses a broad range of factors, including physical and cognitive abilities, language skills and technology experience.

## 7.3 Functionality

- 7.3.1 The service must be able to be operated regardless of whether the voter has a speech impairment or is unable to talk. The service must not require voice input by the voter. If user verification processes or other aspects of the service request the voter to speak, fall-back alternatives need to be in place for voters who do not have that capacity. See section 8.6.6 for voice activated credentials.
- 7.3.2 This Standard does not contemplate voting in a polling place but rather from a private area at home or some other private venue, however there are no technical reasons why it could not be deployed in a polling place. Note: If deployed in a polling place pre-registration and voter login processes may vary or not be applicable.
- 7.3.3 The service is at its optimal performance from a landline phone rather than a mobile phone. Voters should be encouraged to use a landline phone to ensure audio quality, to increase security and to minimise the chance of dropouts and battery life issues.
- 7.3.4 The voter shall be allowed to restart or preferably resume a voting session if the voting session drops out.
- 7.3.5 If the election requires Robson Rotation, then the voter should be served the same rotation on subsequent attempts.
- 7.3.6 Note: Potentially the system could use the User ID to seed the randomisation.
- 7.3.7 If the system allows for continuation of the previous voting session after call disconnection or dropout then the partial vote should be discarded if the voter has not reconnected to the service within 15 minutes.
- 7.3.8 Following authentication, the voter shall be issued the ballot paper(s) for which they are enrolled. The details of the ballot paper (such as the electorate) shall be spoken to the voter prior to them commencing voting for the first ballot and no other identifying information about the voter shall be spoken. The voter should never have to choose their own ballot paper(s).
- 7.3.9 The ballot paper(s) presented to the telephone voter shall be a true and fair representation of the printed ballot paper with the order of candidates preserved.



- 7.3.10 The EMB shall ensure that candidate and party names are pronounced correctly and in the manner that the candidate or the appropriate officer of the political party deem the correct pronunciation. Refer to 8.7.2.1
- 7.3.11 The system shall not allow the voter to cast more than one vote in each ballot except where legislation allows.
- 7.3.12 The preferences of the voter shall not be linked to the voter's identity so as to meet the requirements of a secret ballot.
- 7.3.13 The EMB should consider whether there is a risk of a cohort being identified if the votes are reported in a group or block.
- 7.3.14 The voter must not be encouraged to cast an informal vote, but must be able to cast an informal vote as is the right of a paper-based voter. The voter shall be alerted if the vote that is about to be cast is incomplete, thus making the vote informal.
- 7.3.15 In the case of non preferential voting, the voter should be alerted if the vote that is about to be cast will not be counted due to an over vote situation.
- 7.3.16 The EMB, where possible, should make available to the voter Group Voting Ticket information if the voter has chosen to vote using a ticket voting method. That is, the voter should be able to know to which candidates preferences will be allocated if they choose to ticket vote rather than indicating preferences for all candidates.
- 7.3.17 If the EMB is required to supply HTVC information in the polling place then the HTVC information should also be available in the telephone system.
- 7.3.18 Note: This standard does not prescribe how this information should be formatted or how it is made available as there are many factors involved and may be developed addressed in a separate document or a later version of this standard.
- 7.3.19 If there is no legislative requirement for the EMB to provide HTVC information then they may still choose to supply this information via the telephone voting system or another channel.
- 7.3.20 These telephone voting principles have been developed to be flexible enough to adapt to the wide variety of formality rules within full preferential, partial preferential and optional preferential voting systems.

## **7.4 Exclusions**

- 7.4.1 Other than requiring equipment which supports DTMF signalling, features of the customer's telephone including keypad layout and handset design are outside the scope of this Standard.
- 7.4.2 Voters may choose to use a speaker phone facility resulting in others in close proximity to the voter conceivably hearing the voice output from the voting system. A reminder should be given to the voter about the secrecy of their ballot, in case they are contemplating cast or confirming their vote using the loud speaker function.

## **8 Requirements and Guidelines – General**

- 8.1.1 This section contains a variety of high-level design principles for automated telephone voting services, derived in part from AS/NZS 4263 and the Australian Bankers' Association Telephone Banking Standard.
- 8.1.2 In the subsequent section of this document, there are specific requirements and recommendations sequenced against each of the key steps that may be involved in casting a vote via an automated telephone voting system.
- 8.1.3 The wording of requirements as "shall", "should" or "may" clauses indicates the relative importance of each requirement.
- 8.1.4 To claim compliance with this standard, all "Shall" clauses must be met.



- 8.1.5 During design, and prior to implementation, it is strongly recommended that users with a range of capabilities and limitations be engaged to trial the automated solution and provide feedback.
- 8.1.6 There are significant benefits to consulting with users from the beginning of the project (for example through focus groups at the initial planning stages) and at key stages within the project. Feedback from users can then be incorporated into the business/user requirements that create a framework for the development of technical and design specifications. This helps minimise usability and accessibility problems after implementation.

## **8.2 Compliance with AS/NZS 4263**

- 8.2.1 Except where specifically stated in this Standard, All IVR providers shall comply with AS/NZS 4263: 2003 or the most current version of that standard. This AEC Industry Standard document provides specific guidelines for voting that are beyond the scope of AS/NZS 4263.

## **8.3 Consistency**

- 8.3.1 All users of IVR systems will benefit from consistent use of terminology, both across channels within a single EMB and across channels within the Electoral industry. For example in written and audio materials relating to voting. It is desirable to have consistent terminology across different EMBs, but very important that consistency exists in all channels within a specific EMB telephone voting implementation. Examples where terminology consistency is important include:
  - 8.3.1.1 Access number and Voter Identification Number
  - 8.3.1.2 PIN, Password and passcode
  - 8.3.1.3 Receipt and transaction number
  - 8.3.1.4 The order of steps for casting a vote
- 8.3.2 Experience has shown that consistent and predictable human interfaces benefit users. The benefits can include faster learning, greater productivity, fewer errors and greater satisfaction.
- 8.3.3 Consistent interfaces also benefit the industry by promoting greater acceptance of products and services. Standardization of Automated Telephone Voting systems is particularly important because callers infrequently use, or have never before used a telephone voting system, and do not have the opportunity to read instructions each time they access a different automated Telephone Voting service.
- 8.3.4 Terminology use should be consistent throughout an application and among applications that are integrated with each other within a system.
- 8.3.5 Example: If an Automated Telephone Voting service and an Internet Voting service are in use in an Electoral Commission, it is important that terms be used consistently throughout the two applications, and for all other channels (such as correspondence and customer communication) associated with the services, except where the services themselves need to be differentiated.

## **8.4 Registration and Credentials Format**

- 8.4.1 If the telephone voting service is available for a voter attending a voting venue, then the voter may not need to be pre-registered for the service.
- 8.4.2 If preregistration is not required then the general principle would be that the correct ballot for that voter is determined and selected in the system by the EMB before the voter starts interacting with the voting system.
- 8.4.3 Subject to identification and security requirements, the user should be able to register for the telephone voting service using the telephone, internet or indirectly through a



telephone relay service, without completing printed forms and subject to legislative requirements. This assumes the person is already on the electoral roll.

- 8.4.4 This standard does not preclude registration and authentication processes provided by a trusted source on the behalf of the EMB.
- 8.4.5 The EMB may also allow for the collection of consent to registration to telephone voting at the time of enrolment or via enrolment update processes.
- 8.4.6 Note: As print handicapped voters are a logical audience for telephone voting the legislative requirement to register for this service using a signature should be minimised on the basis that the voter has already enrolled with the EMB and that any further registration is an extension of that enrolment.
- 8.4.7 User IDs shall be 6 or more digits in length and should not be more than 8.
- 8.4.8 User IDs more than 8 digits in length are very hard for most people to remember. This is a particular issue when a person is unable to read the number from printed correspondence, or when they are trying to hear a multi-digit number spoken via computer voice output. This is the case when a person who is print handicapped is accessing a registration number that has been sent via SMS or email.
- 8.4.9 The voter should provide a PIN to the EMB of 4-6 digits.
- 8.4.10 The User ID should contain no leading zeros so the voter can press 0 for help during input prompts.
- 8.4.11 Note: Because the Voter will nominate their PIN, the PIN only may contain a leading zero.
- 8.4.12 User IDs shall only contain numeric characters (digits).
- 8.4.13 When issuing credentials for telephone voting, via email, SMS on paper or in Braille, numbers of more than 4 digits should be chunked into groups of 3 or 4 digits to assist comprehension and memory retention.
- 8.4.14 For example, the voting identification number 12345678 should be sent to the user as 1234 5678 or the number string 123456 should be sent to the voter as 123 456 and should be read out in single digits.
- 8.4.15 IVR providers should work towards shorter identification and validation processes.
- 8.4.16 When a voter is issued with a user ID, the ID should remain unchanged for that registration, unless it has to be changed for security reasons.
- 8.4.17 Accessible receipts or credentials should be delivered in the voter's preferred accessible format, either by phone or SMS or email or Braille or printed letter format or a combination thereof.

## **8.5 Key Assignments**

### **8.5.1 General or System Keys**

- 8.5.1.1 Keys to navigate within the ballot paper and cast the vote are covered in the next section. This section relates to the general keys that are used to access the system and menus within the system.
- 8.5.1.2 Unless otherwise stated, key assignments should be as specified in AS/NZS 4263.
- 8.5.1.3 Where two or more menu choices are presented to the voter, these should be in the form of a menu of options, usually assigning the first option to key 1, the second to key 2 and so on.
- 8.5.1.4 Where the voter is asked a yes or no question, the affirmative option should be indicated by the 1 key, and the negative by the 2 key.



- 8.5.1.5 Note - 1 and 2 being 'yes' and 'no' are suitable so long as the instructions are clear, and the chance of the user being confused about the use of the 2 key in two-dimensional navigation is minimised.
- 8.5.1.6 The # key shall be used to move forward to the next stage in the voting session. Such as confirming or completing the ballot.
- 8.5.1.7 The Star key shall be used to enter the 'Options Menu' explained below.
- 8.5.1.8 The 0 key shall be used to request context-sensitive help, which may provide the option to transfer the voter to a human operator for assistance.
- 8.5.1.9 The 4 and 6 keys are keys generally assigned for moving to previous or next items within an options menu or to increase or decrease the speed of the speech from within the options menu.
- 8.5.1.10 The 5 key, in conjunction with the 4 and 6 keys restores a setting (such as speed) to its default setting.

## 8.5.2 Within the Ballot

- 8.5.2.1 When a voter is completing a ballot some keys operate differently to the ways they might in other automated telephone services. This is to provide one or two-dimensional movement within a ballot paper.
- 8.5.2.2 In a ballot, 4 and 6 are used to move left and right within a horizontal list of group tickets or candidates,
- 8.5.2.3 2 and 8 are used to move up and down within a vertical list of group tickets or candidates.
- 8.5.2.4 As the voter moves through the list, the candidate name or group name is spoken.
- 8.5.2.5 When the voter moves to an item in the ballot which has previously been assigned a preference, then the system shall announce the number of the preference first, and then shall speak the candidate name second. For example:
- 8.5.2.6 "Preference 3, <candidate name>"
- 8.5.2.7 If the voter moves rapidly from one item to another in a list, speech output shall be interrupted immediately, and the next item the voter lands on shall be spoken.
- 8.5.2.8 Note: This interrupt capability is very important to maximize efficiency of navigation and assigning preferences.
- 8.5.2.9 The 5 key is used to allocate the voter's next preference, to select the current item or to mark the voter's next preferred candidate.
- 8.5.2.10 The 5 key also toggles the current item as selected or unselected. That is, while the 5 key is principally used to allocate a preference it can also be used as a quick way to unselect the current item, so long as that item is the highest numbered preference in a ballot. .
- 8.5.2.11 If 5 is pressed on an already selected item, and that item is not the highest numbered preference, then the user shall be advised that this action is unavailable and that they should enter the options menu to deselect one or more previously selected items. This is to prevent the voter from deselecting earlier allocated preferences accidentally and creating gaps within their allocation of preferences.
- 8.5.2.12 Many technology-savvy voters will be used to the concept of toggling for selecting and deselecting with the same key and this allows a more natural and efficient method of changing the last preference rather than having to enter the options menu to cancel the most recent action.



## **8.6 Input and Navigation Factors**

### **8.6.1 Non-duplication of information input**

- 8.6.1.1 Within a given call, unless information re-entry is required for reasons of privacy, security, or verification, the user should not be required to enter any given piece of information more than once.

### **8.6.2 Minimisation of user key presses**

- 8.6.2.1 The number of key presses required of the user should be minimised.

### **8.6.3 Access to Operator**

- 8.6.3.1 Voters who are having difficulty in navigating or comprehending the automated telephone voting service should be given the option to speak with an operator in order to either cast their vote with assistance of a human, or to obtain technical support on the telephone voting service.
- 8.6.3.2 Voters shall always be asked if they wish to transfer to an operator and confirm this action through the use of the 1 key. If in transferring to an operator the voter's partially completed vote would be discarded, then the voter shall be informed of this and be asked to confirm if they still wish to transfer to an operator.
- 8.6.3.3 The hours of operation of the Call Centre should be assessed by the EMB to ensure a good level of customer service.

### **8.6.4 Changing information that has been entered**

- 8.6.4.1 When technically feasible, a voter should be provided with the opportunity to cancel a ballot, and/or change preferences and information that has been entered during the call.
- 8.6.4.2 When a voter indicates that they wish to cancel or clear preferences from their current ballot, the system shall present the voter with the confirmation menu before acting on the instruction.
- 8.6.4.3 When the voter has entered their preferences for the current ballot, the system shall provide a confirmation phase where the voter will hear the preferences cast against each candidate in preference order, not ballot paper order.
- 8.6.4.4 Example: After the caller has finished entering their preferences, the system shall repeat the preferences and ask the voter if they would like to cast their vote or return to the ballot to make any changes.

### **8.6.5 No Reliance on Speech Input**

- 8.6.5.1 Where an IVR system requests voice input, such as a means for user authentication, provision shall be made for callers who do not speak within a certain period by either allowing for DTMF input or transfer to a human operator, for example voice authentication requirements for security. Voice authentication is generally not recommended, and DTMF processes are preferred.
- 8.6.5.2 Menus, commands and prompts should be designed to minimise confusion and minimise the complexity of performing voting tasks.



## **8.7 Voice and Audio Output**

8.7.1 Spoken Audio output includes all of the following information:

- 8.7.1.1 Informative Welcome message;
- 8.7.1.2 Prompts for entry of authentication information by the voter;
- 8.7.1.3 General instructions and overview of service including the ‘always-available’ keys
- 8.7.1.4 A practice vote facility;
- 8.7.1.5 A description of the ballot paper and what the voter will be required to do to correctly complete the “virtual ballot paper”
- 8.7.1.6 Instructions on how to navigate around the “virtual ballot paper”
- 8.7.1.7 Status information indicating progress on the voting process (eg. number of candidates selected and number remaining)
- 8.7.1.8 Navigational information identifying current location on the “virtual ballot paper”
- 8.7.1.9 Audio presentation of voter’s preference(s), prior to lodging the vote;
- 8.7.1.10 All candidate and party names

### **8.7.2 Party and Candidate Names**

- 8.7.2.1 Automated telephone voting solutions shall use recorded human speech for presentation of all party and candidate names.
- 8.7.2.2 Candidate and party names are pronounced correctly and in the manner that the candidate or the appropriate officer of the political party deem the correct pronunciation.
- 8.7.2.3 The same voice talent shall be used, and volume and speed of delivery must be the same for all candidates and choices, with equal neutral vocal emphasis given to each name.
- 8.7.2.4 The same voice shall be used to speak each candidate appearing in a single ballot, and where ever possible should be used across all ballots in a voting session.
- 8.7.2.5 Note: Human voices rather than computer generated synthetic speech are particularly necessary to ensure the correct pronunciation of candidate names.

### **8.7.3 Spoken Instructions**

- 8.7.3.1 Automated telephone voting solutions shall use recorded human speech for all English instructions and feedback, except in instances where the system is required to speak unanticipated textual information.
- 8.7.3.2 In almost all instances human voice recordings will be understood more effectively by voters, in particular for infrequent users, as the voice talent can be directed to emphasise important words and telephone keys while speaking instructions and presenting feedback.
- 8.7.3.3 The primary or base language for any official wordings and instructions derived from the ballot paper shall be in English. Only instructional text and help messages should be in other languages. All election data, such as candidate and party names shall be in English.
- 8.7.3.4 For Australian elections neutral Australian accents will have the greatest clarity and broadest appeal.



- 8.7.3.5 The EMB should use voice fonts to distinguish between instructions and election data, such as candidate and party names. Ideally a female voice for the instructions should be used, and a male voice for the candidate, party or group data.

## 8.7.4 Audio Quality

- 8.7.4.1 Audible prompts, messages and instructions require excellent audio quality. They should be without distortion or interference, moderately paced, and be played at optimal volume and clarity.
- 8.7.4.2 Telephone Voting Systems shall use an audio encoder that complies with the ITU-T G.722 standard for encoding and storing audio information (1988) or an encoder that provides equivalent or better audio quality. Eg G.729
- 8.7.4.3 Note: G.722 is an ITU standard coder-decoder program that provides 7 kHz wideband audio at data rates from 48, 56, and 64 kbits/s. This standard offers a significant improvement in speech quality over earlier standards, and thus provides greater accessibility to users.
- 8.7.4.4 Note on audio quality: Audio that is optimally produced will avoid the necessity to provide a user-adjustable volume control feature in the telephone voting service.
- 8.7.4.5 Female modulation is often received more easily by people who use hearing aids and tends to be perceived as more friendly. However, all audio output should be within the lower frequency ranges of human hearing, for example, through use of medium or lower pitched voices.
- 8.7.4.6 Standard and clear enunciation, such as distinguishing numbers such as 5 and 9, is paramount, as is clean and consistent trimming of audio files to ensure they sound natural when concatenating audio files.
- 8.7.4.7 Audio should be recorded in a professional recording studio which has experience with spoken-voice recording. Best results will be gained from attentive vocal direction of the voice talent by a telephony expert, with assistance by EMB staff familiar with the project, while the scripts are being recorded.

## 8.8 Scripts, Prompts and Wordings

### 8.8.1 Statement Phrasing

- 8.8.1.1 Where appropriate to the context, scripts for audio should adhere to the following guidelines:
- 1) Sentences should be short and simple in structure, and only the simplest vocabulary used. Care however should be taken to avoid patronising messages;
  - 2) Informative messages which advise the voter of the progress of the activity and inform the voter when or how to perform a step in the activity should be clear and to the point.

From AS/NZS 4263 see Section 3.2 Prompt Characteristics

### 8.8.2 Spoken Menus

- 8.8.2.1 Except where the voter is within a ballot paper, numbered menus should be used to present options.

From AS/NZS 4263 also see section 3.4 Menus



### 8.8.3 Consistent Symbol and action Names

- 8.8.3.1 All symbols, including #, \* and 0 shall be spoken consistently, as specified in clause 3.5.2 of AS/NZS 4263.
- 8.8.3.2 That is:
  - 8.8.3.2.1 # shall be spoken as 'Hash' or 'The Hash Key'
  - 8.8.3.2.2 \* shall be spoken as 'Star' or 'The Star Key'
  - 8.8.3.2.3 0 should be spoken as 'zero' or 'The Zero Key'.
- 8.8.3.3 The preferred terms for actions such as "hang up" "entering data via the keypad" etc listed in table 3.2 under clause 3.5.3 of AS/NZS 4263 should also be consistently used in telephone voting systems.

## 8.9 Repeat and Speed of Delivery

- 8.9.1 IVR providers shall provide voters with an option to repeat the last spoken menu, command or prompt.
- 8.9.2 This repeat feature shall always be available by pressing the Star key followed by the 1 key.
- 8.9.3 IVR providers shall provide voters with an option to alter the speed of delivery of IVR system prompts. Many voters who are blind or have low vision are accustomed to accelerated rates of speech and would benefit from such an option.
- 8.9.4 Menus, instructions and feedback, but not party and candidate names, should have speed adjustment available.
- 8.9.5 The audio system shall allow the voter to change the rate of speech throughout the voting session while preserving the current votes. The range of speeds supported should provide speaking rates from 100% to 200%. For example one, one and one half and two times the nominal speaking rate.
- 8.9.6 The pitch of audio shall remain constant regardless of the speed of audio.
- 8.9.7 Speed is adjusted via the Options Menu, by pressing Star, followed by either 4, 5 or 6.
- 8.9.8 Note that while a faster delivery speed may suit experienced and expert voters, it can be overwhelming for new users, older people, and those with other disabilities.

## 8.10 Extended Use of Star – Automated Telephone Voting

### 8.10.1 Reasons for Extended Use of Star

- 8.10.2 Telephone Voting systems shall implement the Extended Use of Star as specified in clause 2.6.3 of AS/NZS 4263. In telephone voting applications Extended Use of Star will be referred to as the Options Menu. The benefits of an Options Menu implemented through Extended Use of Star are as follows:
  - 8.10.2.1 When completing most ballots, the keypad is reassigned with one or two-dimensional movement, using the 2, 8, 4 and 6 keys to move up, down, left and right respectively. This largely precludes standard presentation of audio menus to the voter.
  - 8.10.2.2 Extended Use of Star allows the voter to access a menu of functions at any time, regardless of the context.
  - 8.10.2.3 Automated Telephone Voting is a sophisticated use of an IVR and Extended Use of Star allows extensibility to provide new features and



functions over time, without breaking the conventions being set out in this standard.

- 8.10.2.4 It provides a consistent way to support speed control, repeating the last spoken message, pausing and resuming the voting session, switching between languages, additional instructions etc without overloading key assignments which are already taken up to navigate a ballot.

### 8.10.3 **Recommended Options Menu Order and Wordings**

- 8.10.4 Any time the Star key is pressed, some or all of the following (valid and meaningful) general options are presented. Spoken messages should be customised to meaningfully reflect the context from which the Star key was pressed,

- 8.10.5 If a key has no meaning in the voter's current context, it shall not be spoken.

- 8.10.6 Options Menu: \* - Back one step

*To clear input, undo your last selection, or to go back one step, press star*

Conditional upon the voter's system context when Star is pressed, they hear a relevant message pertaining to the action of pressing Star a second time. eg. during entry of their Voter Identification Number, the prompt may be -

"To clear the digits you have entered so far, and start again, press Star"

- 8.10.7 Options Menu: 1 - Repeat

*To have the system replay the last spoken menu or message, press 1*

This could be the current menu, the last prompt spoken, a receipt number, or other relevant information.

- 8.10.8 Options Menu: 2 - Pause

*To pause your voting session for up to 5 minutes, press 2.*

This pause feature is recommended to allow for a break for the voter during a long voting session, and is a feature recommended in a variety of recent standards dealing with electronic voting and on IVR usability. A prompt and option should be offered allowing the voter to extend the period of system pausing, when the pause period is close to being elapsed.

Note: Once activated, a prompt shall inform the voter how to resume from the pause state. The Hash key is suggested.

- 8.10.9 Options Menu: 3 – Clear all preferences

*To Clear all preferences from the current ballot, press 3.*

On press of 3, the voter will be presented with a meaningful confirmation prompt to ensure that they do wish to proceed with the clearing of all their current preferences in the current ballot. For example, if the user is mid-way through completing a ballot, then pressing 3 from the options menu would alert the voter that proceeding will result in the current ballot being cleared. In such instances, a confirmation menu is presented, with 1 confirming the action and 2 cancelling the request and returning the user to the context from which Star was pressed. In this confirmation instance, pressing # could also be construed as a non-confirm and be treated as if 2 had been pressed.

- 8.10.10 Options Menu: 4, 5 and 6 – Speed Control

*To Slow the speaking rate, press 4*

*To set the speaking rate to normal, press 5*

*To increase the speaking rate, press 6*

Options 4, 5 and 6 allow for three speeds, or if desired a greater range of speed options. The slowest speed should be 75 percent of the nominal speaking rate.



If two faster speeds are offered, these should be 150 percent and 200 percent of the nominal speaking rate.

If only one faster speed is offered, this should be 175 percent of the nominal speaking rate.

#### 8.10.11 Options Menu: 7 – Return to earlier context or start over

*To return to an earlier point in your voting session, or to return to the starting menu (if available) press 7*

On press of 7, the voter will be presented with a meaningful confirmation prompt relating to moving back to the start of the current major application stage or to the previous major stage. For example, if the user is mid-way through completing a ballot, then pressing 7 from the menu would alert the voter that proceeding will result in the current ballot being cleared. In such instances, a confirmation menu is presented, with 1 confirming the action, and 2 cancelling the request and returning the voter to the context from which Star was pressed.

In this confirmation instance, pressing # could also be construed as a non- confirm and be treated as if 2 had been pressed.

Note: Option 7 and Option 3 largely duplicate one another. In normal instances 7 is the recommended key for returning to the main or starting menu of an IVR application. However, 3 is recommended to clear the current ballot, so it is heard earlier on in the Options Menu.

#### 8.10.12 Options Menu: 8 – Change Language

*To change to another language, press 8*

This is the key assignment for language change recommended by ISO IVR Standards and AS/NZS 4263

#### 8.10.13 Options Menu: 9 – End Call

*To end this call, press 9.*

The voter is presented with a confirmation menu before the call is ended and notified if their vote will be lost. If the system offers a feature where the vote can be resumed during a subsequent call, then the voter shall be asked if they wish their current progress to be stored on the system.

An 'end call' facility should be provided by the telephone voting system, to ensure that no other person is able to connect to a partially completed telephone session, after a voter leaves it.

#### 8.10.14 Options Menu: # – Exit Menu

*To leave the options menu, and be returned to <description of context such as the ballot for x electorate> please press the Hash key.*

Pressing the Hash key is the way to exit the options menu without performing any action from the options menu.

## 8.11 Help and Documentation

8.11.1 Although printed and alternative format information such as quick reference guides and instructions may be provided, the IVR system shall be designed in such a way that it can be operated without reference to such information.

8.11.2 All printed information should be in plain English and available in accessible formats on request and in other supported languages.

8.11.3 Deployment of automated telephone voting solutions shall include implementation of a detailed level of online context-sensitive help, accessible via the 0 key.

8.11.4 The EMB will provide information to the voter on how to access the voting service, and other relevant information.

Adapted from AS/NZS 4263 see also 2.7.1 Use of 0 (zero) key



## 8.12 Timeouts and Errors

- 8.12.1 IVR providers should refer to the timeout values listed in AS/NZS 4263 Table 4.1., which contains a range of values for different timeouts. If timeout values are too short, then insufficient time is available to many callers to make decisions and perform tasks, leading to confusion, anxiety, frustration, increased error rates and unsuccessful call completion. This is particularly so for new or infrequent users or some people with cognitive and/or psychiatric disabilities.
- 8.12.2 If a voting session is inactive with no input from the voter via the DTMF interface for longer than 30 minutes, then the voting session shall time out and reset so that the voter may dial into the service again in order to freshly cast their vote. Any preferences entered before the 30-minute timeout shall be discarded.
- 8.12.3 IVR providers should consider extending the length of time for valid inputs in menus for a user's second chance (after an error or timeout has been triggered).
- 8.12.4 For example – when re-prompting for User ID after a timeout.

## 8.13 Error recovery

- 8.13.1 Voters should be provided with the opportunity to recover from their most recent error, without being required to re-enter correct information.
- 8.13.2 Words such as "wrong", "illegal", "fatal" and "critical" should be avoided in error messages for Voters.
- 8.13.3 Note: Providers should also refer to AS/NZS 4263 Section 4 for error recovery procedures.

## 9 Requirements and Recommendations for Each Voting Step

- 9.1.1 This section contains brief notes on key steps in the telephone voting system.

### 9.2 Calling the service

- 9.2.1 Welcome message

### 9.3 Logging in to the System

- 9.3.1 When the system is accessed outside of a voting venue, the voter will be required to log in and authenticate themselves using the credentials provided at the time of registration. For information on credential formats see section (hyperlink)
- 9.3.2 The voter will be prompted to enter a User ID and the system shall request the user to complete the entry with the Hash key.
- 9.3.3 Example: "Please enter your six-digit Voter Identification Number, followed by the # key".
- 9.3.4 The voter will then be prompted to enter their PIN and the system shall request the user to complete the entry with the Hash key.
- 9.3.5 The system should allow sufficient time for the voter to find and retrieve their Used Id and PIN. The maximum times as specified in AS/NZS 4263 Table 4.1 Data entry task ... Should be used.
- 9.3.6 If a timeout is reached while prompting for the User Id or PIN then the system should allow a longer period before timing out
- 9.3.7 If 10 seconds was the timeout period in the first prompting then 15 seconds might be used as the timeout value for the second prompting.



## **9.4 Overview of the keys and the voting process**

- 9.4.1 Preliminary instructions including an overview of important keys and commands, eg. Help from key 0 and Options Menu from Key Star. This describes the functionality of the universal (or always available) keys. “To hear these messages again, press the 1 key or to continue, press 2”. The 1 key is suggested to hear the message again in this instance, because the user may not yet be familiar with use of the options menu and the use of Star followed by 1, to repeat the last spoken message.
- 9.4.2 “There are three ballots. The ballots will be issued to you for the Division of Banks, for the NSW Senate and NSW referendum.”

## **9.5 Practice Voting Facility**

- 9.5.1 An option to practice voting shall be offered to the voter prior to doing their real vote, or for callers prior to real voting being available.
- 9.5.2 The practice voting facility needs to clearly indicate to the voter that they are not casting a real vote. It also should indicate that practice voting session is a smaller version of the actual voting session to enable the voter to understand key elements of the voting system, such as layout for and navigation of the ballot paper and to understand voting tickets. It will allow the voter to be familiar with the voice fonts and should be non-political using (for example) fruits or vegetables as the candidates, groups or parties. The practice session should be reflective of the requirements and guidelines within this document. The practice vote facility needs to use consistent terminology such as “Do you want to lodge your practice or demonstration vote”.
- 9.5.3 The size and scale of candidates in this facility needs to be significant enough, so that the voter gains a sense of the level of time and attention required to do a real vote. For example in NSW it is anticipated that there could be 324 BTL candidates. Therefore too small a number of practice candidates would not prepare the voter for the magnitude of the task ahead, but neither should the number be too great, for this may unduly fatigue the voter.
- 9.5.4 The practice vote facility needs to accurately reflect the actual voting process so that the voter becomes familiar with the system.

## **9.6 Commencing the Voting Session**

- 9.6.1 System prompts voter to commence voting in the first ballot.
- 9.6.2 Voter initiates the voting session by pressing either the 1 or Hash key

## **9.7 For Each Ballot**

- 9.7.1 For example “You are now in the Banks ballot. On the ballot paper the names are listed vertically”. This will be followed by completion instructions which will depend on different legislation and wording instructions on the ballot paper as to whether the wording on the paper ballot fully translates to telephone voting. For example, an industrial election may require 3 crosses from 10 candidates. The telephone system may need to therefore say - “to put a cross in this box press 5”.
- 9.7.2 Usually for a government election the system would present instructions such as “there are 20 candidates listed vertically on the ballot paper. To go up press 2 or to go down press 8. To select a candidate use the 5 key.”

## **9.8 Ballot Navigation and boundaries**

- 9.8.1 The IVR system shall support a verbal representation of the virtual ballot papers to mirror the physical ballot papers.
- 9.8.2 When entering the telephone ballot it is important that the voter is given information about the layout and navigation of the ballot. In particular the following situations need to be considered.



- 9.8.3 A verbal overview/description of the ballot paper such as “This ballot paper is made up of four vertical columns of candidates. Three of the columns representing group tickets and one column has ungrouped candidates.”
- 9.8.4 Keys used to navigate between candidates or groups on the ballot paper.
- 9.8.4.1 Using navigation keys of 2 = up, 8 = down, 4 = left and 6 = right, the phone-based ballot paper should reflect the general layout of the paper ballot. That is, if candidates are listed vertically, then they should be presented vertically on the phone service. In such a situation 2 is used to move up the list and 8 to move downwards.
  - 9.8.4.2 To select or deselect, use the 5 key. “To select an item, press the 5 key, if you change your mind about that selection, you may press the 5 key again, to deselect your last selection. If you wish to deselect earlier preferences, you can do this from the options menu, which is available at any time by pressing the Star key.”
  - 9.8.4.3 The voter should be given information about their relative location within a list of groups or candidates, including when they move between groups, or are at a ballot paper boundary i.e. at the first or last candidate in a group, or on the first or last column of the ballot.
  - 9.8.4.4 For example in a vertical list of candidates, “This is the first candidate in the list. To move down to the next candidate press 8”.
  - 9.8.4.5 When the voter is within ballot paper and reaches a boundary of the ballot paper the system shall advise the voter they are at a boundary and shall not progress the voter beyond the end of the list.
  - 9.8.4.6 The system shall not wrap or move from the last candidate or group to the first when at a list boundary, to minimize confusion for the voter.

## **9.9 Choosing between Group or Preference Voting**

- 9.9.1 The voter should be prompted to choose their method of voting. The voter should be provided with information about the number of candidates or groups and an approximation of the time it may take to complete either method.
- 9.9.2 When there are two or more choices, such as above-the-line voting or below-the-line voting, this choice shall be presented in the form of a standard IVR menu. For example “If you wish to vote above-the-line for a single group voting ticket, please press 1; If you wish to vote below-the-line and nominate your preferences for all candidates listed, please press 2.”

## **9.10 Reviewing the Ballot**

- 9.10.1 It is important that the voter is clear and confident about how their vote will be cast, including information advising them if their vote is incomplete. A careful balance needs to be struck between providing sufficient detail, while avoiding undue verbosity in the output provided.
- 9.10.2 When the voter’s preferences are being presented for review and confirmation, the voter shall hear their vote in preferential order, not in ballot paper order.
- 9.10.3 Each preference should be read out in the following style:
- Preference 1 – Keith Cucumber
  - Preference 2 – Sam Celery
  - Preference 3 – Gabrielle Grape
  - And so on
- 9.10.4 For ballot papers with more than 7 candidates, the voter’s preferences should be read back in chunks of no more than 7 items per set. If there is more than one chunk, then no chunk should have more than 7 items.



- 9.10.5 Voters should be able to move backwards and forwards through chunks. At the end of speaking of each chunk, a brief menu should be presented giving the voter options of navigation between chunks or the option to cast their vote.
  - 9.10.5.1 4 will move to the previous or first chunk,
  - 9.10.5.2 5 will repeat the chunk just heard,
  - 9.10.5.3 6 will move to and read the next or last chunk of preferences.
  - 9.10.5.4 Hash will cast the vote and exit the review process at any time during presentation of chunks of preferences for voter review.
- 9.10.6 The Hash key shall be used to temporarily save each ballot before moving to the next ballot or the voting being prompted to cast their vote.
- 9.10.7 Once the vote for that ballot has been saved, the system then prompts the voter to either advance to the next ballot if there is one, or review all their ballots, or cast their vote(s) and complete the voting session.

## **9.11 Types of ballot papers**

- 9.11.1 Ballot papers can be visually presented in a variety of ways, depending on the State/Territory and the legislation. The Telephone voting system needs to present, via navigation and voice output, the primary navigation direction (vertical or horizontal) found in the printed ballot. The reasons for this are as follows:

- 9.11.1.1 So the formal instructions for completing the ballot make sense in the telephone context;
- 9.11.1.2 So the 'how to vote' party instructions that the voter may have access to can be followed, and will correspond to the telephone voting instructions; and
- 9.11.1.3 So that telephone voters with familiarity with paper-based voting can transfer that knowledge and understanding to the telephone voting context.

### **9.11.2 No tickets Ballot**

- 9.11.2.1 The voter shall be notified of the total number of candidates in the ballot.
- 9.11.2.2 Horizontal lists of candidates shall be navigated using the 4 and 6 keys to move left and right respectively.
- 9.11.2.3 Vertical lists of candidates shall be navigated using the 2 and 8 keys to move up and down respectively.
- 9.11.2.4 The 5 key shall be used to nominate a preference and to deselect the last preference made.

### **9.11.3 With tickets**

- 9.11.3.1 The user shall be notified of the total number of groups in the ballot.
- 9.11.3.2 Horizontal lists of groups shall be navigated using the 4 and 6 keys to move left and right respectively.
- 9.11.3.3 Vertical lists of groups shall be navigated using the 2 and 8 keys to move up and down respectively.
- 9.11.3.4 The 5 key shall be used to nominate a preference and to deselect the last preference made.
- 9.11.3.5 The 1 key should allow the voter to hear the candidates that are listed for that group, For example if the voter is voting above the line then the



candidate names immediately below the line for that group will be spoken.

- 9.11.3.6 EMBs should consider providing a facility to the voter that when they have navigated to a group box that they could press the 3 key and hear the group voting ticket preferences lodged with the EMB for that group or party.

#### 9.11.4 **Independents and/or Ungrouped.**

- 9.11.4.1 In some ballots, candidates do not belong to a party or do not lodge a group voting ticket. In these cases EMBs make provision for them on the ballot paper. If the ballot paper is horizontal it is usually at the far right, if the ballot paper is vertical it is usually at the bottom of the ballot paper, but not in the ticket voting section.

#### 9.11.5 **Groups who do not lodge a group voting ticket.**

- 9.11.5.1 Candidates can nominate as a group but not lodge a group voting ticket either in error or deliberately. These groups are not able to be allocated a box for ticket voting. Where groups of candidates do not lodge a group voting ticket, they will still appear as a group but in the preferential section of the ballot paper only.
- 9.11.5.2 In these situations, the system shall clearly describe to the voter that if they wish to vote for candidates in this group, they will need to start again and choose to vote for candidates in the preferential section according to the rules of the ballot.

### 9.12 **Referendum Ballots and Questions**

- 9.12.1 Referendum questions should be answered using 1 for yes and 2 for no. Statutory wording will need to be reflected in the instructions and presentation of the question. Clause 2.9.1 from AS/NZS 4263 specifies the association of the 1 key for 'yes' responses and the 2 key for 'no' responses.
- 9.12.2 The following example is modified from the wording in the 2007 Federal Election Voting Script:
- 9.12.3 "Referendum on proposed Constitution alteration. A proposed law: "Should all gardens have a shrubbery?" Do you approve this proposed alteration?"
- 9.12.4 To vote YES for this question, please press the 1 key.
- 9.12.5 To vote NO for this question, please press the 2 key.
- 9.12.6 When you are satisfied with your choice, please press the hash key."
- 9.12.7 Note: it may be necessary for the EMB to consider if the system needs to randomly present the option for No first, and the option for Yes second. Or for every even numbered registration that the presentation order is alternated. Refer to [7.3.5](#)
- 9.12.8 If there is more than one referendum question, each shall be dealt with sequentially.
- 9.12.9 "To move to the next referendum question, press the Hash key."

### 9.13 **Receipting the vote**

- 9.13.1 IVR providers may wish to consider the use of an automated voice call-back service, SMS applications, or email to supplement output from the telephone service.



## **10 Privacy and Security Considerations**

10.1.1 When voting is provided outside the polling place there are inevitably fewer controls over the level of privacy and security of the voter's right to a secret ballot. Similar risks are found in postal vote situations, but should still be considered by the EMB.

### **10.2 Security Principles**

10.2.1 Authentication processes should not reveal the identity of the voter by voice or other means, other than verbally confirming the electorate for which the voter's ballot papers are issued .

10.2.2 It is the responsibility of the voter to cast their vote in a location and at a time which will satisfy their requirements for the secrecy of their vote.

10.2.3 Instructional information and associated telephone voting literature may provide suggestions to minimise such risks.

10.2.4 Voters should be able to notify the telephone voting system that they wish to end the telephone voting session, so as to minimise another householder inadvertently accessing the abandoned voting session.

10.2.5 Note: If the phone is hung up without ending the call via the system menus, under some circumstances the line could be left open.

### **10.3 Review Clause**

10.3.1 This document should be reviewed periodically to ensure that it maintains currency with policy, legislative trends and technological developments.

