Measuring the Electoral Rolls

A report on the results from the
Sample Audit Fieldwork
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Prepared by the Roll Integrity Unit

CONTENTS

Abbreviations and Glossary of Terms

Abbreviation/Term	Description
ABS	Australian Bureau of Statistics
Active Address	Address on the AEC's Address Register that is currently in use.
AEC	Australian Electoral Commission
ANAO	Australian National Audit Office
CCD	Census Collection District
CRU	Continuous Roll Update – current methodology used to maintain electoral rolls, through data matching and data mining to identify potential enrolment changes, and then contact people identified and invite them to update their enrolment information or enrol.
Enrollable Address	Address where persons live and for which they can enrol, for example houses and units.
Gones	Term used when an elector has left address.
Inactive Address	Address on the AEC's Address Register that is not used, for example because it does no longer exists due to redevelopment.
JSCEM	Joint Standing Committee on Electoral Matters
Land use codes	These specific standard codes are attached to addresses to describe the types of address and their use for example, houses, residential units, parks, vacant allotments, holiday units, nursing homes, motels and so forth.
NAC	Non-Attendance Card – a review officer leaves this during fieldwork when no one is at home, seeking confirmation of the enrolment details for that address.
Objection	The process of removing a persons name from the roll where there are grounds for believing they are no longer eligible to remain enrolled at that address – usually on (but not restricted to) the grounds of non-residence.
PE System	Potential Elector System – a database of names and addresses of apparent eligible persons who have not enrolled or updated their enrolment.
RMANS	The AEC's Roll Management System – a database management system that includes the elector file, the Address Register and data used for the CRU program.
RSE	Relative Standard Error – measure of sampling error used by the ABS.
SAF	Sample Audit Fieldwork
SCU	ABS Statistical Consultancy Unit
Unenrollable Address	Addresses where persons cannot enrol, for example commercial premises, parks, holiday homes, and vacant allotments.

EXECUTIVE SUMMARY

Background

The 2005 Sample Audit Fieldwork (SAF) is the second undertaken by the Australian Electoral Commission (AEC). The SAF is an annual program of checking a random sample of electoral rolls to determine the accuracy and completeness of those rolls and to enable an appraisal of the effectiveness of the AEC's Continuous Roll Update (CRU)[1] program to be done. This initiative was introduced in response to recommendations by the Australian National Audit Office (ANAO) and the Joint Standing Committee on Electoral Matters (JSCEM) that the AEC undertake such sample checking of the electoral rolls.

In addition to reporting to stakeholders on the state of electoral rolls, the AEC also uses the information collected by the SAF to assess the accuracy and progress of the development of the Address Register within the AEC's computerised Roll Management System, and the effectiveness of operational processes and procedures.

Methodology

In 2003 the AEC conducted a pilot exercise loosely based on the ANAO and JSCEM recommendations. The AEC then provided the results of the pilot to the Australian Bureau of Statistics (ABS) Statistical Consultancy Unit (SCU) to assist them in developing a sampling model that could be used for the SAF. The sample model that the SCU developed provided the AEC with advice on how the SAF should be undertaken and suggested the sample sizes that would be needed to allow confidence in the results from the SAF. With enhancements, that model formed the basis for undertaking the SAF in 2004, and again in 2005.

The 2005 SAF was undertaken in 225 randomly selected Census Collection Districts (CCDs)[2] nationally over 16 days between 5 March and 20 March, with the cut-off date for processing results being 15 April. The SCU advised in 2003 that the resulting data from such a sample size could be considered reliable at the state/territory level and very reliable at the national level.

Results

Enrolment

As was the case in 2004, the 2005 SAF measured the following enrolment-related indicators:[3]

[1] CRU is the AEC's primary methodology for maintaining electoral rolls and consists of a range of complementary activities designed to ensure the electoral roll is continuously kept as up-to-date as possible. With CRU, data on the roll is reviewed, and/or matched with other Commonwealth and state/territory data, to identify specific addresses from which, or into which, people are moving, and to identify any anomalies in roll data, such as more people being enrolled at an address than the expected number for the type of dwelling. The AEC then contacts the residents at these addresses and asks them to confirm or update their enrolment information. Other CRU activities aim to identify eligible persons that are not enrolled, such as school leavers and new citizens, and invite them to enrol. Refer to the *2004 SAF Report*, and the *CRU Report* issued annually by the Electoral Council of Australia, for more comprehensive discussions on the CRU methodology.

[2] The ABS divides Australia into geographical areas for the purpose of collecting and disseminating statistics, the CCD being the smallest geographic area. CCDs average about 225 dwellings; in rural areas the number of dwellings is smaller.

[3] In calculating these indicators certain unknown factors require the AEC to make assumptions based on other information. The main assumption made is that the SAF identifies all eligible persons during fieldwork – this might or might not be the case but is not easily determined or quantified.

- **enrolment participation** – this is calculated by comparing the number of eligible electors currently enrolled to the total number of persons estimated to be eligible to enrol as identified during the SAF;
- **enrolment completeness –** this measures completeness of divisional rolls. It is a calculation of the number of eligible electors currently on divisional rolls as a percentage of those who are eligible to be on those rolls as identified by the SAF. In measuring completeness, electors who were enrolled in the correct division, but not at the correct address within that division, were included in the calculations; and
- **enrolment accuracy** – this is the percentage of current electors who are enrolled for the address at which they are living; that is, their enrolments were correct at the time of the SAF.

The following table presents the results from the 2005 SAF, with the AEC performance targets and the 2004 SAF results shown for comparison.

	Enrolment participation	Enrolment completeness	Enrolment accuracy
Performance target	95 per cent	95 per cent	90 per cent
2005 national result	**98.4 per cent**	**96.3 per cent**	**91.1 per cent**
2004 national result	97.7 per cent	95.2 per cent	89.5 per cent

The national results are calculated using a weighting formula advised by the SCU that is based on population sizes in each state and territory. For 2005, the national weighted average results for each indicator exceeded the relevant performance target. In addition, most jurisdictions showed improvements on their 2004 SAF results. All states and territories exceeded the performance target for enrolment participation, all except for the Northern Territory (NT) exceeded the target for enrolment completeness and all except for Queensland and the NT exceeded the target for enrolment accuracy.

The Queensland accuracy result was just below the AEC's performance target but, as was the case in 2004, the results in the NT were significantly below the national weighted average results for both enrolment completeness and accuracy. The NT results highlight the ongoing challenges faced by the AEC in achieving an accurate and complete roll in a jurisdiction characterised by a small, but highly mobile, population dispersed over vast distances, with a significant proportion of that population identified as target groups for specific enrolment strategies.

Address Register

The AEC takes the opportunity presented by the SAF to measure the following address-related indicators:

- **Address Register completeness –** this is a measure of the number of valid enrollable (that is, residential) addresses currently on the AEC's Address Register as a percentage of the number of actual valid enrollable addresses as evidenced at the SAF; and
- **Address Register accuracy** – this is the percentage of current enrollable addresses that have been correctly recorded by the AEC in the Address Register.

The following results in relation to address information were obtained from the 2005 SAF, with the 2004 SAF results included for comparison.

	Address Register completeness	Address Register accuracy
2005 national result	**96.2 per cent**	**93.4 per cent**
2004 national result	96.4 per cent	92.9 per cent

The national results are calculated using a weighting formula advised by the SCU that is based on population sizes in each state and territory. The AEC does not set performance targets for overall Address Register completeness or accuracy.[4]

For 2005 both Address Register indicators are consistent with the 2004 SAF results, showing only slight differences for either indicator. Within the individual jurisdictions, most states and territories achieved results above the national weighted average for both address completeness and address accuracy but again the difference between the results was usually small.

Observations

In 2005 the AEC achieved national enrolment participation, completion and accuracy results above its performance targets. In addition, the results for the majority of indicators and for most states and territories improved on the results of 2004.

Although these results are pleasing, it is too early to identify any trends towards more complete and accurate electoral rolls, with many results differing only slightly from those last year. Various factors might have contributed to the improved results in 2005 including:

- close of rolls period for the 2004 Federal Election.[5] This might have had a positive effect on the quality of the rolls in those jurisdictions that had not had an election for some considerable time before the 2004 SAF;
- different characteristics for the sampled CCDs from those reviewed in 2004;
- further refinements to the SAF methodology by the AEC, to improve the efficiency and effectiveness of SAF procedures and processes and enhance the quality of the information collected and calculation of performance indicators; and
- the level of CRU activities in the individual jurisdictions before the 2005 SAF.

[4] The AEC sets the following performance targets for the Address Register:
- 25 per cent of existing addresses are validated for existence, and are correctly described, classified and aligned, annually;
- 100 per cent of addresses added to the database are validated for existence, and are correctly described, classified and aligned; and
- 100 per cent of enrollable addresses are reviewed over a two-year period.

[5] Rolls closed on 7 September and polling occurred on 9 October 2004.

BACKGROUND

This chapter provides a brief overview of the Sample Audit Fieldwork methodology and activity statistics from the review.

Introduction

1.1 The Australian Electoral Commission (AEC) has a statutory responsibility under the *Commonwealth Electoral Act 1918* to maintain the Commonwealth electoral rolls. Additionally, all states and territories have a Joint Roll Arrangement[6] with the AEC to maintain state/territory rolls, and therefore the AEC also has a responsibility in how it manages the electoral rolls to state and territory electoral authorities, as well as stakeholders such as members of parliament, political parties, election candidates and the voting public.

1.2 The completeness and accuracy of the electoral rolls are integral to free and fair federal, state or territory, and local government elections in Australia. Since 1984, when the AEC was established, the management of the electoral rolls has evolved considerably. The introduction of the Sample Audit Fieldwork (SAF) program continues this evolution.

Objectives

1.3 The 2005 SAF is the second undertaken by the AEC. The SAF is an annual program of checking a random sample of the electoral rolls to determine the quality of those rolls and to enable an appraisal to be made of the effectiveness of the AEC's Continuous Roll Update (CRU)[7] program. The AEC implemented the SAF in response to recommendations in reports by the Australian National Audit Office (ANAO)[8] and the Joint Standing Committee on Electoral Matters (JSCEM)[9] that it undertake such sample checking of the electoral rolls.

1.4 Therefore, the primary objective for undertaking the SAF is to collect statistically valid information that can be used in measuring the completeness and accuracy of the electoral rolls in areas covered by the CRU program. This in turn will fulfil the requirements of the relevant ANAO and JSCEM recommendations.

1.5 In addition to reporting to stakeholders on the quality of electoral rolls, the AEC also uses SAF information to assess the accuracy and completeness of the Address Register within the AEC's computerised Roll Management System (RMANS), and the effectiveness of operational processes and procedures.

[6] Or a Joint Enrolment Arrangement in those states that maintain a separate state roll, Victoria and Western Australia.

[7] CRU is the AEC's primary methodology for maintaining electoral rolls. CRU involves identifying, mainly through matching the rolls to external data, electors who might need to update their enrolment details and then writing to those electors prompting them to do so. Refer to the *2004 SAF Report*, and the *CRU Report* issued annually by the Electoral Council of Australia, for more comprehensive discussions of the CRU methodology.

[8] *Integrity of the Electoral Roll*, Audit Report No.42 2001-02.

[9] *The Integrity of the Electoral Roll*, Review of ANAO Audit Report No.42 2001-02 Integrity of the Electoral Roll, Joint Standing Committee on Electoral Matters, 2002.

Methodology

1.6 In 2003 the AEC undertook a pilot exercise, loosely based on the ANAO and JSCEM recommendations, which reviewed a sample of the rolls from one division in each of New South Wales (NSW), Victoria and Queensland. The AEC then provided the results from the pilot to the Australian Bureau of Statistics (ABS) Statistical Consultancy Unit (SCU) to assist them in developing a sampling model for the SAF. The sample model developed by the SCU provided the AEC with guidance on how the SAF should be undertaken and suggested the sample sizes that would be needed to allow confidence in the results from the SAF. With enhancements that model formed the basis for undertaking the first SAF in 2004, and again in 2005.

1.7 The AEC continues to refine the SAF methodology, including for 2005:

- further improvements to the collection of statistics and the calculation of performance indicators;
- better co-ordination and communications with staff involved in fieldwork and processing information; and
- expansion and further refinement of the post-SAF audit function.

1.8 The SAF involves review officers checking the accuracy and completeness of elector and Address Register information, by doorknocking addresses in randomly selected segments of the rolls. At the completion of the review the information collected by review officers is returned to the relevant divisional office for processing into RMANS. This information forms the basis for calculating some of the AEC's performance indicators and allows us to assess the quality of the electoral rolls.

1.9 Appendix 2 provides detailed information on the SAF Methodology. The remainder of this chapter provides information on the SAF fieldwork and related workload statistics; Chapter 2 presents and discusses the results from the SAF.

Fieldwork

1.10 The 2005 SAF was undertaken in 225 randomly selected Census Collection Districts (CCDs)[10] nationally over 16 days between 5 March and 20 March, with the cut-off date for processing results being 15 April. The SCU in 2003 advised that the resulting data from such a sample size could be considered reliable at the state/territory level and very reliable at the national level.

1.11 Those 225 CCDs included 51,763 enrollable addresses for examination by review officers. Of these, review officers could not contact residents at 7,702 (14.9 per cent) addresses after two visits (compared to 8,111 addresses – 15.6 per cent – in 2004). The non-contact rate varied amongst jurisdictions, the lowest being Tasmania (8.5 per cent) and the highest the Northern Territory (NT – 23.3 per cent).

1.12 Addresses where the residents refused to provide information to review officers numbered 137, marginally higher than the 135 refusals in 2004 but still averaging less

[10] The ABS divides Australia into geographical areas for the purpose of collecting and disseminating statistics, the CCD being the smallest geographic area. CCDs average about 225 dwellings but in rural areas the number of dwellings is smaller.

than one for each CCD reviewed. A feature of the 2005 SAF was the high proportion of Secure Access Buildings (SABs) concentrated in one jurisdiction. In addition to the number of such addresses, 503, being higher than that in 2004 (391), the majority (413) were in the NT. A high contact rate is important statistically, as it means that the results will be more reliable. The AEC will undertake further analyses to see whether a high level of SABs affect in any way the SAF result.

1.13 A small number of death transactions, 20, were identified as outstanding during the SAF (24 in 2004); these were spread over six jurisdictions.

Enrolment forms collected and processed

1.14 A total of 4,343 enrolments were processed from the fieldwork and this represented five per cent of total electors at the start of fieldwork. Victoria had the least number of enrolments processed both in numbers (147) and proportion of enrolment at the start of the SAF (3.1 per cent). Western Australia (WA – 285 or 3.4 per cent) and Tasmania (357 or 4.8 per cent) also processed small numbers of enrolments, suggesting a high accuracy and completeness rate.

1.15 Overall, as at 15 April 2005 enrolment forms were received from approximately 66 per cent of the unenrolled eligible persons identified in the SAF – Queensland achieved the highest rate at 75.2 per cent. (A high collection rate is important to reduce non-sampling errors – see Appendix 2, The SAF Methodology – and ensures that the results from any analysis can be relied on.) The remainder of the unenrolled electors have been entered into the AEC's Potential Elector (PE) System and will be followed up and invited to enrol in due course. The fact that there is only a small number of unenrolled eligible persons identified by the SAF indicates that the quality of the sampled electoral rolls are high.

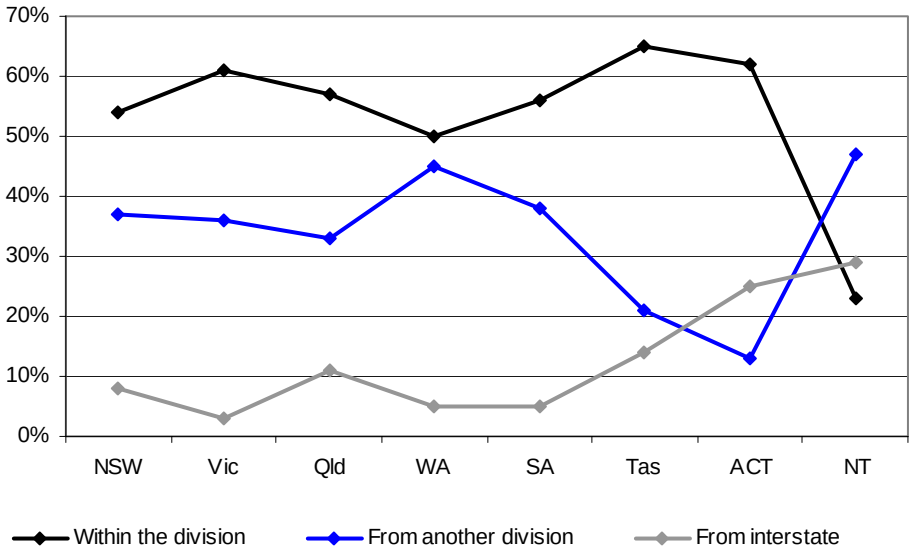
1.16 The composition of enrolment types varying amongst the states and territories. Of the enrolment forms received, 568 (13.1 per cent) came from first time enrollees 18 years of age or older; this equates to 0.6 per cent of all electors in the sampled CCDs at the start of the SAF. Tasmania, South Australia (SA) and NSW had the highest proportions of new enrolments as a proportion of enrolment forms processed, at 19.6 per cent, 15 per cent and 14.1 per cent respectively.

1.17 There were 451 re-enrolments in the SAF for persons who had been removed from the roll by objection at some stage and had not previously re-enrolled. This represents approximately 11 per cent the enrolment forms processed during the SAF and about half of one per cent of electors in the CCDs reviewed by the SAF. The NT had the highest number (105) and proportion (13.2 per cent of enrolment forms) amongst the jurisdictions.

1.18 Where electors transferred into a division during the SAF, the destination from which they came shows distinct characteristics depending on jurisdiction; these are shown in Figure 1. For most states persons mainly transferred from one address to another within the same division. This comprised between 50 and 60 per cent of transfers for most states. Transfers from another division, but still within the same state, usually accounted for between 30 and 40 per cent of transfers, with interstate transfers usually being below ten per cent of transactions.

1.19 In contrast, the smallest three jurisdictions showed distinctly different patterns. Tasmania showed a much lower inter-division transfer rate with a commensurate increase in intra-divisional and interstate transfers. In the Australian Capital Territory (ACT) interstate transfers comprised a quarter of transfers, due to the close proximity and transience between the ACT and NSW. The NT shows a markedly different pattern of enrolment transfers, with significantly lower rate of intra-divisional and much higher inter-divisional transfer.

Figure 1: Source of electors transferring into divisions during the SAF



1.20 These characteristics might have ramifications for the assumptions made in calculating some of the enrolment-related performance indicators (discussed in Appendix 2) and will be considered by the AEC before the next SAF.

2 RESULTS

This chapter presents and discusses the results obtained from the 2005 SAF.

Enrolment

2.1 The SAF measured the following aspects of electors' enrolments:

- **enrolment participation** – this is calculated by comparing the number of eligible electors currently enrolled to the total number of persons estimated in the sample to be eligible to enrol;
- **enrolment completeness** – this measures completeness of divisional rolls. It is a calculation of the number of eligible electors currently on divisional rolls as a percentage of those who are eligible to be on those rolls. In measuring completeness, electors who were enrolled in the correct division, but not at the correct address within that division, were included in the calculations; and
- **enrolment accuracy** – this is the percentage of current electors who are enrolled for the address at which they are living; that is, their enrolment details required no amendment because of the SAF.

2.2 In calculating these indicators there are certain unknown factors where the AEC has to make assumptions based on other information. For example, to derive meaningful and reliable performance information for the SAF, in some instances the AEC adjusts the initial results obtained from the fieldwork. Similarly, there is a basic assumption in calculating each of these performance indicators that the SAF identified all eligible persons during fieldwork – this might or might not be the case but is not easily determined or quantified.

2.3 Appendix 2, The SAF Methodology, contains the formulae for calculating these performance indicators and the details the assumptions made in making those calculations. Appendix 3 provides the statistics used to calculate the indicators summarised in the tables and figures of this chapter.

Enrolment participation

2.4 The participation rate is a reflection only of the estimated number of eligible persons who are enrolled anywhere in Australia. It does not consider whether those enrolments are accurate, for example whether the person is actually living at the address that he/she currently is enrolled for. The following table shows the participation rate by jurisdiction as determined from the SAF.

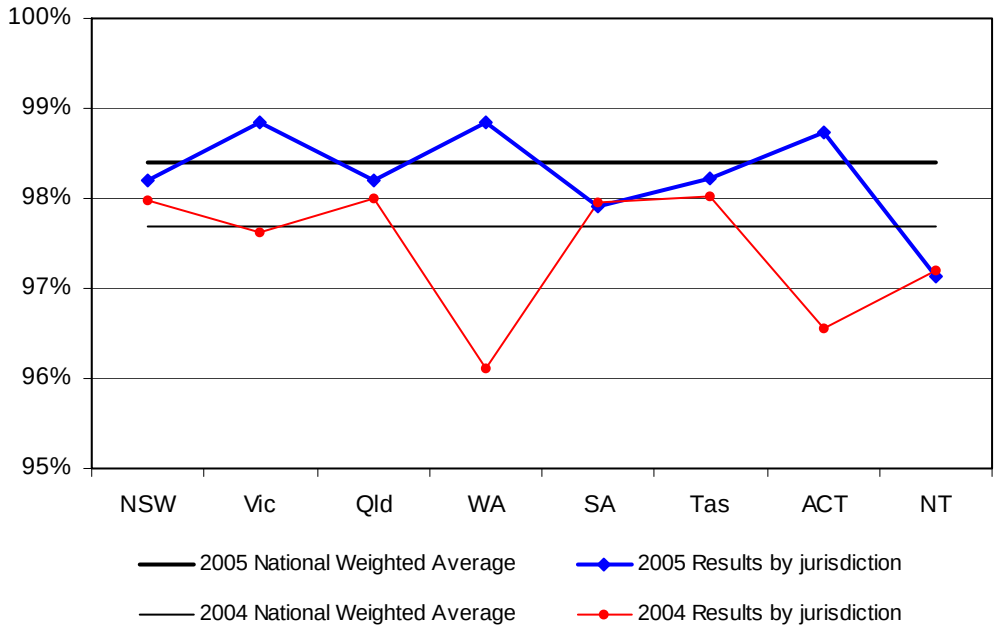
Table 1: Enrolment participation (as a percentage of the total potential enrolment)

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	National
2005	**98.2**	**98.8**	**98.2**	**98.9**	**97.9**	**98.2**	**98.7**	**97.1**	**98.4**
2004	98.0	97.6	98.0	96.1	98.0	98.0	96.6	97.2	97.7

The national participation rates quoted are calculated using a formula advised by the ABS SCU. This formula weighs the results from each state and territory, based on their population sizes and proportion of the sample selected for review, before adding these to get the national weighted average results. Figures are rounded to one decimal place.

2.5 All jurisdictions exceeded the AEC performance target of 95 per cent for participation and six jurisdictions achieved a participation rate above 98 per cent. WA recorded the highest participation rate at 98.9 per cent, marginally better than Victoria (98.8 per cent) and the ACT (98.7 per cent). The differences between the 2005 results and those from 2004 for each jurisdiction are shown in the following figure.

Figure 2: Enrolment participation



2.6 The participation rate was higher than that for 2004 in most states but particularly for WA, Victoria and the ACT. Only in two jurisdictions, SA and the NT, were participation rates less than that reported for the 2004 SAF but in both these instances the difference was only about one tenth of one per cent.

2.7 That most jurisdictions for 2005 showed an improvement in participation over the results obtained in 2004 appears to support comments made in last year's SAF Report on the importance of close of rolls as catalysts in prompting many people to enrol. For example, the 2004 SAF results showed both WA and the ACT were below the national average for enrolment participation, neither having had a major electoral event since the 2001 Federal Election to further stimulate enrolment. These

jurisdictions are amongst the best in 2005, suggesting that the close of rolls for the 2004 Federal Election had encouraged many people to update their enrolment.

2.8 Also 2005 participation results were consistent, with all state and territory results except those for the NT (where particular challenges exist in encouraging enrolment) tightly grouped around the national weighted average – no more than plus or minus half a percentage point from the average.

2.9 Although these results are pleasing, they do not represent a trend towards long-term improvement in participation, or imply that the AEC can maintain participation rates at this level over the whole electoral cycle. Furthermore, aside from the September 2004 close of rolls, other factors might also have contributed to the higher participation results in the 2005 SAF including:

- different characteristics for the sampled CCDs from those reviewed in 2004. Over time, in a statistically valid sample, such anomalies will tend to cancel out but might cause variations in results between consecutive years;
- further refinements to the SAF methodology by the AEC. Although the basic methodology is the same as last year, for 2005 the AEC improved the precision of the statistical information extracted from RMANS and addressed various operational issues that arose during the 2004 SAF; and
- the level of CRU activities in the individual jurisdictions before the SAF.

2.10 However, it is likely that complicated dynamics are shaping the quality of the rolls in different jurisdictions, so it might be some time before SAF results indicate any definite trends towards improved electoral rolls.

Enrolment completeness

2.11 The completeness indicator shows the condition of divisional rolls. 'Enrolment participation' and 'enrolment completeness' are very similar measures, the difference being completeness considers whether electors are enrolled for their correct division (hence it is a measure of a *divisional* roll) whereas participation considers whether the person is enrolled at all.

2.12 The other difference between the two indicators is that participation can be measured by means other than the SAF, for example by using external data such as ABS population statistics.[11] However, completeness cannot be similarly measured because reliable data are not available down to a divisional level. The AEC has attempted in the past to use ABS census data (for example) to measure the completeness of divisional rolls but found those data become increasingly more unreliable as they are disaggregated below the state/territory level, to the point of the results generated being meaningless.

2.13 To derive meaningful and reliable performance information for the SAF, in some instances the AEC has had to adjust the initial results obtained from the fieldwork in making the calculations. For example, in considering objections allowance must be

[11] Although it is possible to measure enrolment participation using external data, the results would not necessarily agree with those derived using the SAF. This is because of differences in the type of data collected, the manner in which it is collected, the assumptions made in making the calculations, and so on.

made for those being removed from the divisional roll, but who still live somewhere else in that same division. To deduct all objections from the starting enrolment figure would produce a result worse than the actual. Therefore, the AEC adjusts the objection figure used in the completeness calculations to reflect those electors who remain in the division. A similar adjustment is done to estimate the number of new or re-enrolled persons to the division contained in the PE System. These adjustments are documented and explained in more detail in Appendix 2.

2.14 The results obtained in each state and territory, and the national weighted average, are shown in the following table.

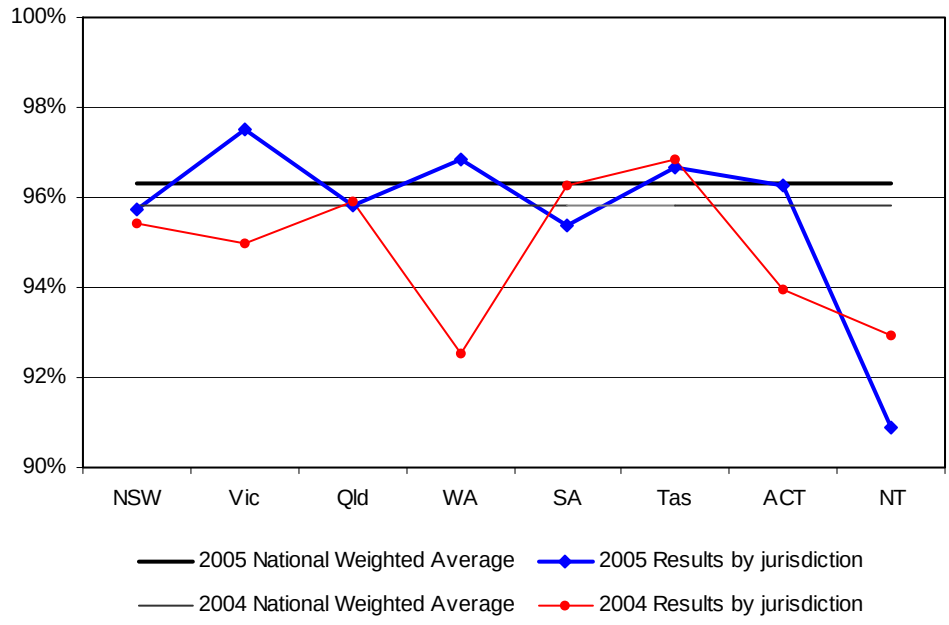
Table 2: **Divisional roll completeness**
(as a percentage of the total potential divisional enrolment)

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	National
2005	**95.7**	**97.5**	**95.8**	**96.8**	**95.4**	**96.7**	**96.3**	**90.9**	**96.3**
2004	95.4	95.0	95.9	92.6	96.3	96.9	93.9	92.9	95.2

The national completeness rates quoted are calculated using the weighting formula advised by the ABS SCU. Figures are rounded to one decimal place.

2.15 The national weighted average result exceeded the AEC performance target of 95 per cent and was up on last year's result. All jurisdictions except the NT also exceeded the performance target for enrolment completeness. Individual jurisdictions were divided equally between those showing an improvement on their 2004 SAF results and those that declined. However, the difference in most cases was less than two per cent. Figure 2 shows the changes in the SAF results between the two years for each jurisdiction.

Figure 3: **Divisional roll completeness**



2.16 The results show significant improvement over the 2004 SAF in Victoria, WA and the ACT. Two of these jurisdictions had not had an electoral event for some time before the 2004 SAF; for WA and the ACT the federal election in November 2001 was the most recent event. Victoria had its state election in November 2002. This suggests the positive effects of the 2004 federal close of rolls in stimulating electors to update their enrolments, mentioned under participation, might indeed have affected the results in these jurisdictions.

2.17 Against these improvements are the results in other jurisdictions, which appear not to have been affected in the same way. However, Queensland, SA and Tasmania have extensive CRU programs making use of a comprehensive suite of Commonwealth and state data sources. This might be maintaining the completeness in these states at a consistently higher level than would otherwise be the case and therefore close of rolls might not have as significant an effect in these jurisdictions as in others.

2.18 Nevertheless, as for participation, slight differences in SAF results between years do not necessarily show permanent changes in the quality of the rolls. Further analysis by the AEC might identify factors causing the differences noted above.

Enrolment accuracy

2.19 Enrolment accuracy measures the number (proportion) of electors currently on the rolls that are actually living at the addresses for which they are enrolled, and therefore require no change to their existing enrolment. Any changes to electors' information identified during the SAF, not just changes to addresses, affect the accuracy result.

2.20 The following table presents the results for each state and territory as well as the national weighted average.

Table 3: **Enrolment accuracy** (as a percentage of the total enrolment)

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	National
2005	**91.3**	**92.6**	**89.1**	**90.1**	**91.4**	**90.2**	**90.0**	**84.6**	**91.1**
2004	89.8	91.0	89.7	86.1	87.9	89.2	87.2	80.1	89.5

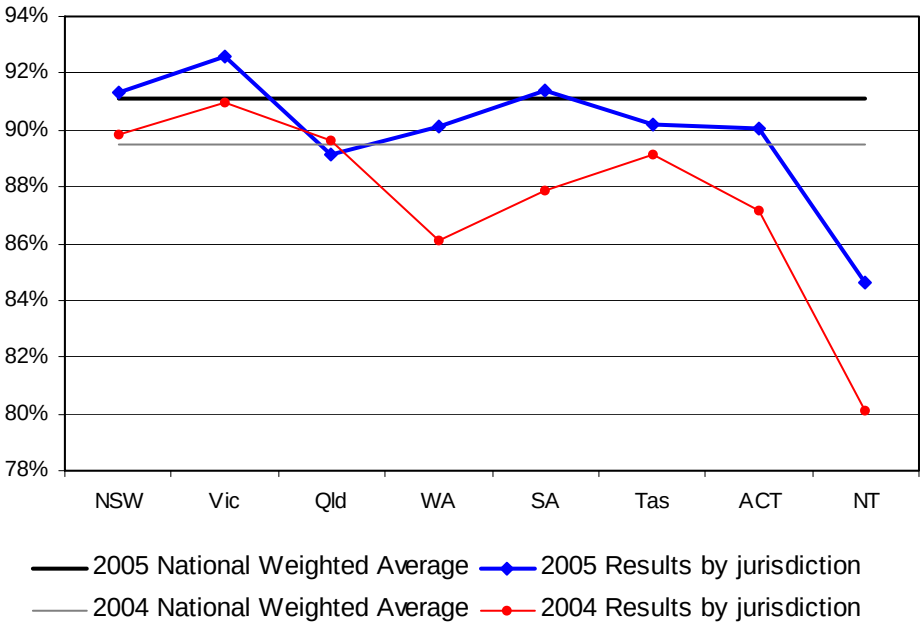
The national accuracy rates quoted are calculated using the weighting formula advised by the ABS SCU. Figures are rounded to one decimal place.

2.21 After applying the ABS SCU weighting, the overall accuracy rate for the country was 91.1 per cent. This result exceeded the AEC performance target for enrolment accuracy of 90 per cent and improved on the 2004 SAF national result of 89.5 per cent. In addition, except for Queensland and the NT all jurisdictions showed varying degrees of improvement over their 2004 SAF results and met the performance target – amongst individual jurisdictions only Victoria met the enrolment accuracy target in 2004.

2.22 Figure 4 on the following page shows the changes in the SAF results between the two years for each jurisdiction.

2.23 Once again the NT accuracy result at 84.6 per cent was well below the national average but was higher than that reported in 2004. This result, and that for completeness, again highlights the particular challenges faced by the AEC in maintaining enrolments in the NT – the highest movement rate (26.4 per cent) in Australia, a small population widely dispersed coupled with a significant proportion of that population identified as target groups for specific enrolment strategies.

Figure 4: **Enrolment accuracy**



2.24 Queensland is another jurisdiction with a high movement rate. In addition, the AEC undertakes a comprehensive program of CRU activities in Queensland and the suspension of that program for the 2004 Federal Election (not being resumed until early 2005)[12] might have affected the results, offsetting to some degree the catalytic effect of the close of rolls.

Address Register

2.25 The AEC takes the opportunity presented by the SAF to measure the following address-related indicators:

- **Address Register completeness** – this is a measure of the number of valid enrollable (that is, residential) addresses currently on the AEC's Address Register as a percentage of the number of actual valid enrollable addresses as evidenced at the SAF; and
- **Address Register accuracy** – this is the percentage of current enrollable addresses that have been correctly recorded by the AEC in the Address Register.

[12] Similarly, a smaller suspension of the program occurred before the Queensland state and local government elections in January and February 2004 and might have affected the 2004 SAF results.

2.26 The AEC does not set performance targets for overall Address Register completeness or accuracy.[13]

2.27 The 2004 SAF revealed inconsistencies amongst states and territories on the recording of unenrollable addresses,[14] and the priority given to this aspect of Address Register data maintenance. It was evident from the 2004 results that any calculations that included unenrollable addresses would be unreliable. Although the AEC is dealing with this issue, by reviewing its procedures for maintaining addresses and providing more training to staff on Address Register maintenance, again for 2005 only enrollable addresses are included when measuring the completeness and accuracy of the Address Register.

Completeness of Address Register

2.28 The following table shows the results obtained in each state and territory, and the national weighted average result, for Address Register completeness.

Table 4: **Address Register completeness** – enrollable addresses
(as a percentage of the total enrollable addresses)

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	National
2005	**98.2**	**92.6**	**96.0**	**97.1**	**97.2**	**98.0**	**97.7**	**97.3**	**96.2**
2004	96.7	97.4	93.4	97.3	97.6	98.1	99.9	98.9	96.4

The national completeness rates quoted are calculated using the weighting formula advised by the ABS SCU. Figures are rounded to one decimal place.

2.29 The Address Register completeness results for 2005 are mixed. The national result is slightly down on 2004 but two states, NSW and Queensland, show an improvement over their respective 2004 results, with NSW recording the highest score for the 2005 SAF at 98.2 per cent. Figure 5 on the following page shows a comparison of the results obtained in 2004 and 2005 for Address Register completeness.

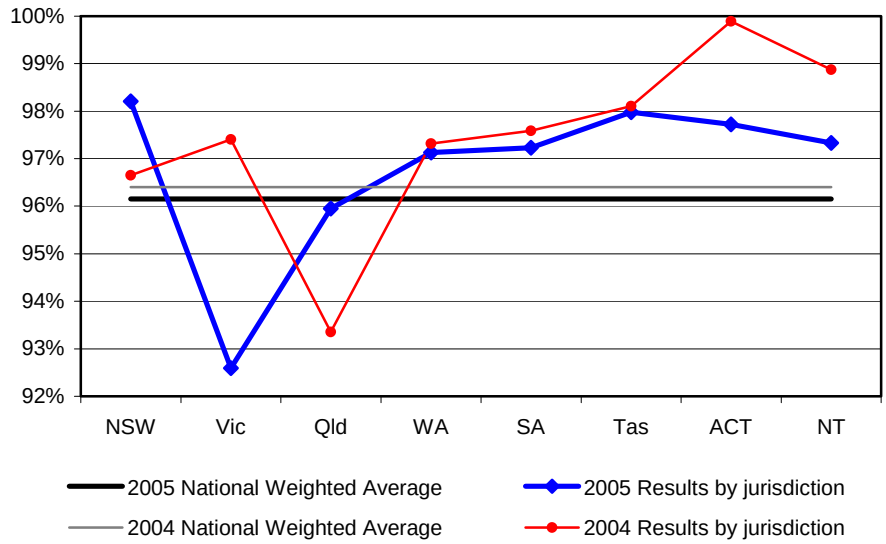
2.30 Against the improvements in NSW and Queensland, Victoria, the ACT and the NT all showed noticeable declines in address register the completeness result compared to 2004. In these jurisdictions the results were caused mainly by changes in the classification of existing addresses within the Address Register (from inactive to active and unenrollable to enrollable) rather than new addresses being added, although both Victoria (55) and the NT (83) did add addresses to the Address Register. Changes to addresses already on the Address Register might reflect the different approaches adopted in various divisions for recording address information (an example being the treatment of unenrollable addresses mentioned previously) or might

[13] The AEC sets the following performance targets for the Address Register:
- 25 per cent of existing addresses are validated for existence, and are correctly described, classified and aligned, annually;
- 100 per cent of addresses added to the database are validated for existence, and are correctly described, classified and aligned; and
- 100 per cent of enrollable addresses are reviewed over a two-year period.

[14] These are addresses where persons cannot enrol, for example commercial premises, parks, holiday homes, and vacant allotments. Nevertheless they are supposed to be recorded in the Address Register to assist in identifying persons attempting to enrol at inappropriate addresses.

indicate the need for more current information from the relevant state/territory or local government authorities.

Figure 5: **Address Register completeness** – enrollable addresses



2.31 Nevertheless, that the majority of 2005 SAF results are in the high nineties shows the Address Register is in good shape and capable of reliably supporting address-based enrolment and the AEC's CRU program.

Accuracy of Address Register

2.32 The table below shows the accuracy of enrollable addresses on the Address Register at the time of the SAF.

Table 5: **Address Register accuracy** – enrollable addresses
(as a percentage of the total enrollable addresses)

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	National
2005	**94.3**	**90.2**	**93.5**	**95.6**	**95.4**	**93.4**	**99.3**	**97.2**	**93.4**
2004	94.5	88.8	92.5	95.4	94.8	95.1	98.6	99.9	92.9

The national completeness rates quoted are calculated using the weighting formula advised by the ABS SCU. Figures are rounded to one decimal place.

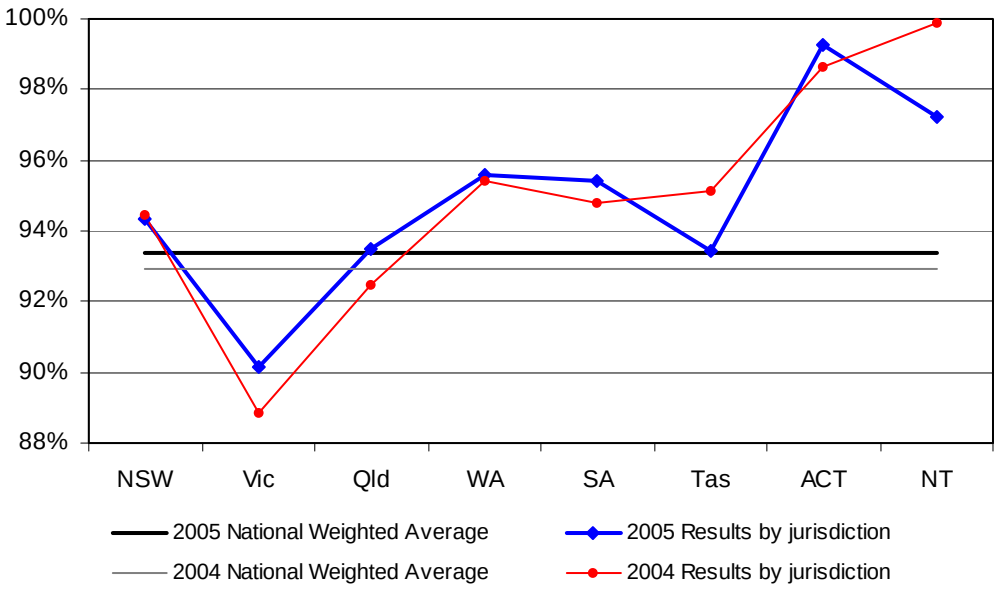
2.33 The 2005 results improve slightly on those for 2004 in most jurisdictions and also for the national weighted average. However, the difference is small – being less than two per cent in most cases. Tasmania and the NT showed more noticeable declines of about two per cent on last year's results. The figure on the following page compares the results obtained in 2004 and 2005 for Address Register accuracy.

2.34 As was reported for address completeness, Address Register accuracy is predominantly affected by type changes, mainly the correct application of land use codes. Although it is highly desirable that the correct land use codes are applied, they have no impact on the integrity of the Address Register. However, nationally 862

addresses were changed to unenrollable and 746 addresses were recorded in the wrong CCD, with 86 of the latter being in Tasmania and noticeably affecting that state's results. Both these issues can affect the quality of the rolls (by possibly allowing enrolment at unenrollable addresses or placing electors in an incorrect state/territory electorate or local government area) and so will be investigated more comprehensively in the AEC's analysis of the 2005 SAF results.

2.35 Notwithstanding these comments, the results do show that all jurisdictions achieved over 90 per cent accuracy for enrollable addresses.

Figure 6: **Address Register accuracy – enrollable addresses**



Observations on the results

2.36 In 2005 the AEC achieved national enrolment participation, completion and accuracy rates above its performance targets. In addition, the results for the majority of indicators and jurisdictions are up on the results of 2004. For Address Register completeness and accuracy, nationally and in all jurisdictions, the AEC achieved at least 90 per cent, with many results being over 95 per cent. These results show the high quality of the Address Register.

2.37 Although these results are pleasing, as stated in the comments on individual indicators, it is too early to identify any trends towards more complete and accurate electoral rolls. Various factors might have contributed to the improved results in 2005 including:

- close of rolls for the 2004 Federal Election;
- different characteristics for the sampled CCDs from those review in 2004;
- further refinements to the SAF methodology by the AEC; and
- the level of CRU activities in individual jurisdictions before the 2005 SAF.

APPENDICES

Appendix 1: The 2005 SAF sample by division

Jurisdiction	Division	Number of CCDs	Number of addresses	Number of electors	Characteristics of the sampled CCDs
NSW	Banks	1	240	366	Metropolitan area of medium density housing.
	Barton	1	297	569	Reasonably stable inner metropolitan with some redevelopment.
	Berowra	1	175	398	Stable established outer metropolitan.
	Chifley	1	215	335	Older well-established metropolitan area.
	Cunningham	1	296	596	Stable, established residential area of a major provincial city.
	Eden-Monaro	1	80	141	Fairly stable rural area with some properties being divided.
	Farrer	1	386	638	Residential suburb of a large rural city.
	Gilmore	1	192	225	Seaside village with many holiday homes.
	Hume	1	97	113	Low density residential area of a rural town and some semi-rural.
	Hunter	1	285	571	Inner suburbs of a major provincial city.
	Kingsford Smith	1	272	469	Well-established metropolitan area.
	Lowe	1	247	186	Inner metropolitan; mainly home units.
	Mackellar	1	144	196	Outer metropolitan; majority are holiday homes.
	Macquarie	1	161	284	Fringe outer metropolitan with farmland.
	New England	1	163	270	Mixture of a country town and rural.
	North Sydney	1	334	727	Inner metropolitan residential area.
	Page	1	375	674	Stable residential area in a small country town.
	Parkes	1	259	288	Residential area of large country town.
	Parramatta	1	193	193	Metropolitan area; high density with some redevelopment.
	Prospect	1	261	515	Outer metropolitan area with some new growth.
	Sydney	2	602	838	Inner metropolitan older residential areas.
	Watson	1	329	671	Reasonably stable metropolitan.
	State total	**23**	**5,603**	**9,263**	
Vic	Corio	1	221	438	Outer suburb of a major provincial city, with new growth areas.
	Flinders	1	291	140	A seaside township; majority are holiday homes.
	Hotham	1	192	389	Outer metropolitan residential; high proportion of residents are non-English speaking background.
	Kooyong	1	233	488	Very stable inner metropolitan residential area.
	Mallee	3	796	1,388	Rural including a small township, a small hamlet and farming areas.
	Maribyrnong	1	329	501	Settled outer metropolitan area.
	Mcewen	1	294	539	Semi-rural with farming land and small acreages.
	Mcmillan	1	241	501	Rural mix of homes on small acreage, small farms and dairy farms.
	Wannon	1	205	427	Urban allotments with some larger properties of a large regional city.
	State total	**11**	**2,802**	**4,811**	

The ‘number of addresses’ above is for all addresses in the CCDs, both enrollable and unenrollable.

Appendix 1: The 2005 SAF sample by division (continued)

Jurisdiction	Division	Number of CCDs	Number of addresses	Number of electors	Characteristics of the sampled CCDs
Qld	Blair	1	232	434	Farming properties of considerable size.
	Bowman	1	304	455	An urban centre with stable population.
	Capricornia	2	241	318	Suburb of large regional town and one township.
	Dawson	1	134	189	Urban area of holiday homes and acreage.
	Dickson	2	517	928	Older established metropolitan area.
	Fadden	1	206	297	Inner suburbs of major coastal city.
	Fairfax	1	6	4	Primarily a service area (Police-Fire-Ambulance).
	Forde	1	349	613	Established low density semi-rural residential.
	Griffith	1	143	274	Metropolitan with some redevelopment.
	Herbert	1	292	514	Urban residential area of a large provincial city with some development.
	Hinkler	1	154	219	Residential area of country town.
	Kennedy	2	400	831	Rural areas.
	Leichhardt	1	228	364	Urban residential area of a large provincial city with some development.
	Lilley	1	333	375	Metropolitan residential; some redevelopment.
	Longman	1	179	320	Developing residential suburb with acreage areas.
	Maranoa	5	537	927	Mixture of country town urban, medium sized agricultural and large rural properties.
	Mcpherson	1	187	364	Coastal urban residential; some secure buildings.
	Moncrieff	2	346	251	High rise units in high-density coastal urban area.
	Oxley	1	138	232	Outer suburb of a large regional city.
	Rankin	3	748	1,170	Metropolitan with some redevelopment.
	Ryan	2	497	943	Stable, developed, outer metropolitan area.
	Wide Bay	1	180	281	Outskirts of a small coastal town; area is undergoing rapid development.
	State total	**33**	**6,351**	**10,303**	
WA	Brand	2	539	881	Outer metropolitan area.
	Curtin	3	425	565	Inner metropolitan with much redevelopment.
	Forrest	3	818	1,085	A major regional centre and a small country town.
	Hasluck	4	808	1,439	Metropolitan with new growth areas and some semi rural blocks.
	Kalgoorlie	2	149	208	Country mining town; high population turnover.
	Moore	4	1,042	1,911	Established residential areas; some development.
	O'Connor	1	10	9	Small rural CCD with hobby farms on town outskirts.
	Pearce	3	817	1,114	Country towns and rural blocks and houses.
	Perth	3	631	915	Established inner metropolitan with some redevelopment.
	Stirling	4	1,057	1,486	Reasonably stable inner metropolitan areas.
	Swan	1	263	390	Well-established inner metropolitan areas.
	Tangney	3	839	1,498	Inner metropolitan with medium density housing.
	State total	**33**	**7,398**	**11,501**	

The 'number of addresses' above is for all addresses in the CCDs, both enrollable and unenrollable

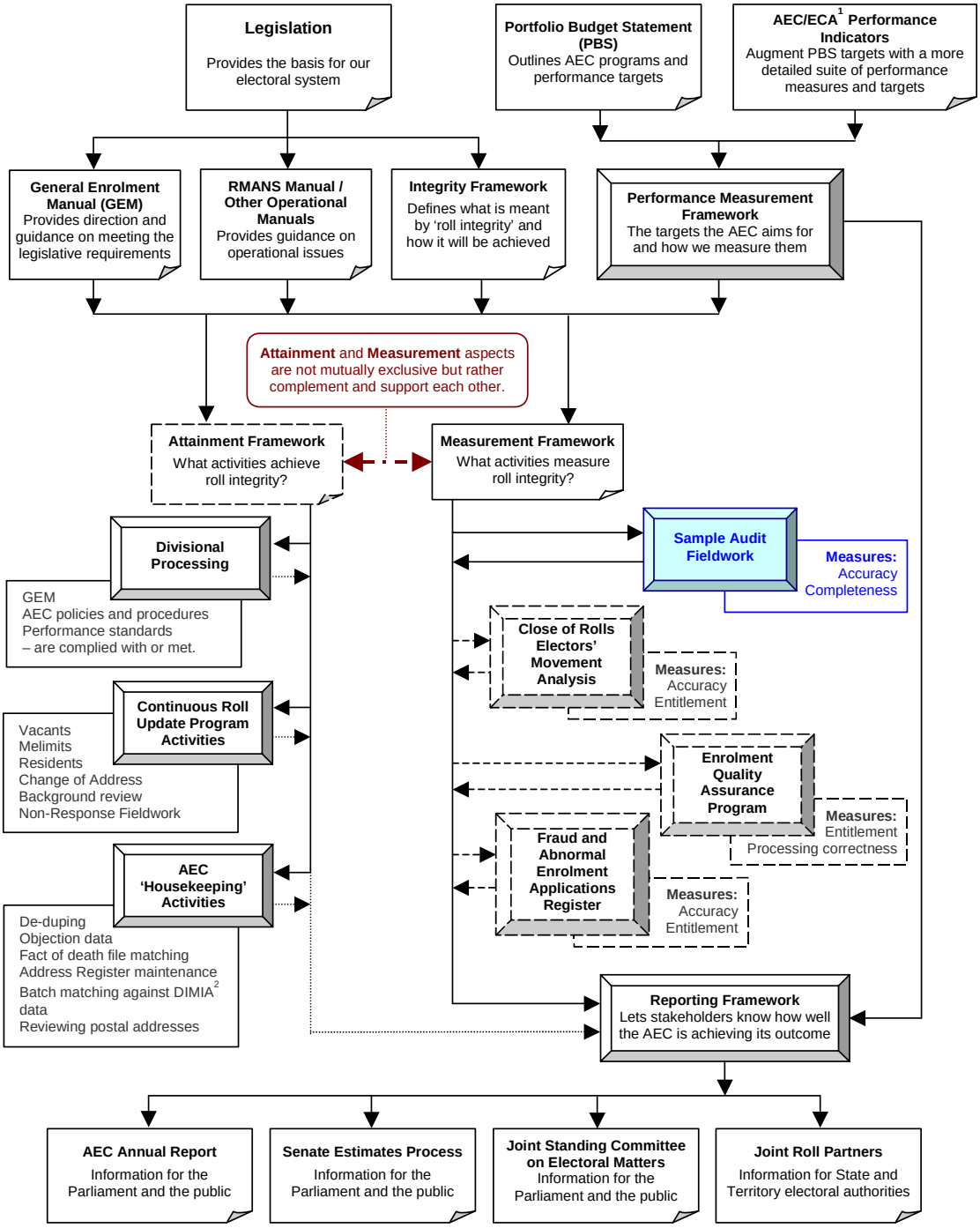
Appendix 1: The 2005 SAF sample by division (continued)

Jurisdiction	Division	Number of CCDs	Number of addresses	Number of electors	Characteristics of the sampled CCDs
SA	Adelaide	5	1,017	1,535	Inner metropolitan and reasonably stable.
	Barker	2	460	682	Residential areas of country towns and some rural.
	Boothby	2	520	728	Mainly stable inner and outer metropolitan areas.
	Grey	3	861	1,441	Regional city and towns; some redevelopment.
	Hindmarsh	3	692	968	Metropolitan areas with some redevelopment.
	Kingston	3	652	1,053	Reasonably stable outer metropolitan.
	Makin	1	1,179	1,759	Outer metropolitan with recent development.
	Mayo	1	205	401	Outer metropolitan with old farming properties.
	Port Adelaide	5	1,220	1,986	Inner metropolitan with some redevelopment.
	Sturt	3	812	1,281	Reasonably stable inner metropolitan.
	Wakefield	5	1,007	1,607	Mixture of outer metropolitan fringe, a country town and rural areas.
	State total	**33**	**8,625**	**13,441**	
Tas	Bass	3	912	1,150	Urban areas of a major regional city.
	Braddon	6	900	1,394	Mixture of regional city residential, rural townships and farmland.
	Denison	6	1,575	1,973	Metropolitan residential areas with some redevelopment occurring.
	Franklin	7	1,513	2,469	Mixture of outer metropolitan and rural.
	Lyons	10	1,623	2,508	Mixture of country towns and rural.
	State total	**32**	**6,523**	**9,494**	
ACT	Canberra	14	3,958	7,472	Metropolitan; medium density with some units.
	Fraser	17	5,874	9,190	Metropolitan with new development areas.
	Territory total	**31**	**9,832**	**16,662**	
NT	Lingiari	7	1,977	2,730	Urban areas of Alice Springs and Katherine.
	Solomon	22	4,883	7,978	Suburbs of Darwin, some new estates.
	Territory total	**29**	**6,860**	**10,708**	
	National total	**225**	**53,994**	**86,183**	

The ‘number of addresses’ above is for all addresses in the CCDs, both enrollable and unenrollable

Appendix 2: The Sample Audit Fieldwork Methodology

To better inform stakeholders on its procedures, the AEC is documenting the components that enables it to achieve the outcome of an effective electoral roll. Conceptually these components are shown in the following diagram, with this component, Sample Audit Fieldwork, highlighted to show its relationship to other components. *Note: Not all of the components identified in the diagram have been implemented. Some at present are suggestions that might be implemented subject to available funding.*



[1] Electoral Council of Australia.
[2] Department of Immigration and Multicultural and Indigenous Affairs.

Background

Sample Audit Fieldwork (SAF) is the process of reviewing a national, statistically valid, sample of the electoral rolls to measure their accuracy and completeness.

Since the early 1990s scrutiny of the electoral rolls has increased and there have been several external reviews undertaken that have included consideration of the integrity of the electoral roll and the adequacy of Australian Electoral Commission (AEC) policies and procedures in maintaining electoral rolls. The AEC has responded to these reviews by not only looking at the way it does things (and making changes where these have been necessary) but also improving the way it measures activities and achievements. The SAF is one part of that improvement process.

The impetus for introducing the SAF came from the Australian National Audit Office (ANAO) report *Integrity of the Electoral Roll* (Audit Report No. 42, 2001-2002). In that report the ANAO stated that it found the roll was 'one of high integrity, and that it can be relied on for electoral purposes', 'that the AEC is managing the electoral roll effectively' and 'AEC policies and procedures can provide an electoral roll that is accurate, complete, valid and secure'.[3] However, the audit also made several recommendations relating to upgrading the AEC's roll-related management information systems, the identification and gathering of relevant information that could be used in measuring roll accuracy and completeness (including reviewing a random sample of the roll) and providing feedback on performance to stakeholders.

Also relevant to the introduction of the SAF was a review of the ANAO report by the Joint Standing Committee on Electoral Matters (JSCEM). The JSCEM is a committee of the Australian Parliament that inquires and reports on matters relating to electoral laws and practices and their administration referred to it by either House of the Parliament or a Minister. The JSCEM reviewed the ANAO report and, amongst other things, reinforced the ANAO recommendation that a sample of the roll should be reviewed periodically. The JSCEM went further and suggested that such a review should also measure of the effectiveness of the Continuous Roll Update (CRU) program.[4]

Objectives

Addressing stakeholder recommendations

The primary objective for undertaking the SAF is to collect statistically valid information that can be used in measuring the completeness and accuracy of the electoral rolls in those areas covered by the CRU program. By undertaking the SAF the AEC will address the relevant ANAO and JSCEM recommendations.

[3] ibid, p.11.

[4] CRU is the AEC's primary methodology for maintaining electoral rolls and consists of a range of complementary activities designed to ensure the electoral roll is continuously kept as up-to-date as possible. With CRU, data on the roll is reviewed, and/or matched with other Commonwealth and state/territory data, to identify specific addresses from which, or into which, people are moving, and to identify any anomalies in roll data, such as more people being enrolled at an address than the expected number for the type of dwelling. The AEC then contacts the residents at these addresses and asks them to confirm or update their enrolment information. Other CRU activities aim to identify eligible persons that are not enrolled, such as school leavers and new citizens, and invite them to enrol. Refer to the *2004 SAF Report*, and the *CRU Report* issued annually by the Electoral Council of Australia, for more comprehensive discussions on the CRU methodology.

Contributing to our performance reporting

In addition to addressing those recommendations, the AEC recognises the importance of having adequate performance indicators and a means of measuring its performance regarding roll completeness and accuracy, and the correctness of its enrolment processing work. To this end the AEC has implemented, and is continuing to develop, a comprehensive suite of activities to ensure the integrity of the electoral rolls and objectively measure that integrity. As part of this process, the AEC defined the term 'roll integrity' as encompassing the following five elements:

- **entitlement** – the individual meets all legislative qualifications for enrolment on the electoral roll, information provided by individuals and witnesses is tested to detect and prevent enrolment fraud;
- **accuracy** – the individual is enrolled for the address at which they are entitled to be enrolled;
- **completeness** – all individuals who are entitled to enrolment are enrolled;
- **processing correctness** – information provided by individuals and organisations is entered correctly, completely and in a timely manner on the roll, addresses are correctly and completely described, classified and aligned; and
- **security** – the electoral roll is protected from unauthorised access and tampering.

The AEC sets various performance targets to measure the different functions that it undertakes; the following targets relate to enrolment and the above integrity elements.

Enrolment participation	Enrolment completeness	Enrolment accuracy
95 per cent	95 per cent	90 per cent

Each of these performance indicators is discussed later. Undertaking the SAF on an annual basis enables the AEC to report on the accuracy, and to a certain degree, participation and completeness, of the electoral rolls and our achievements against these targets.

Measuring our Address Register

Finally, the SAF presents the AEC with an opportunity to verify existing Address Register information within its computerised Roll Management System (RMANS), and collect additional information, in the sampled areas.

The AEC maintains the Address Register in order that each elector's address can be identified to a specific parcel of land; this is necessary because enrolment (in a federal division, state or territory electorate or province, or local government ward) is dependant on where the elector actually lives. In addition, as part of the AEC's enrolment processing procedures, electors are enrolled for addresses only after the addresses are verified for existence.

Further to the latter point, the Address Register is not simply a list of addresses. We also collect and maintain information on the various types of addresses and their uses, and maintain enrolment history links where addresses have changed type and description, for example through redevelopment. Such information gives us the ability to identify attempts to enrol at inappropriate places, for example offices, shops or vacant land.

However, in attempting to assess the quality of the rolls and the Address Register, the AEC has concerns regarding the validity and accuracy of information sources against which its performance can be measured. For example, there is no single listing of all Australian citizens against which we could compare the rolls for accuracy and completeness. External data sources that do exist are arguably not as complete and accurate as the rolls themselves, or the AEC's Address Register. With the dearth of reliable external information upon which the AEC can assess its performance, the analysis of address information collected through statistically valid sampling is important for measuring this aspect of the AEC's business.

Sampling methodology

The size of the electoral roll, over 13.1 million electors at 30 June 2005, means that it is impractical to measure the whole roll. Previously when the AEC used habitation reviews to maintain the roll,[5] a 'full' review of the roll could take up to six months to complete and even then some addresses would not be reviewed because of remoteness, security or other reasons. Therefore, the only practical means to measure the actual roll is to review a statistically valid sample.

In developing an appropriate sampling model for the SAF the AEC sought assistance from the Australian Bureau of Statistics (ABS) Statistical Consultancy Unit (SCU). When preparing its advice, the SCU examined our fieldwork processes, the methodology and data from the AEC's 2003 SAF pilot[6] and the results from the 1998 habitation review.

The SCU advised that three factors would affect the sample size:

- the population size (that is, the size of the electoral rolls);
- the required accuracy (and the acceptable level for sampling error); and
- the variability of the data being collected.

Of these three factors the AEC can easily identify the population size, from roll information contained on RMANS.

Required accuracy

For statistical purposes, two types of errors can affect accuracy – non-sampling error and sampling error. Factors such as inaccurate reporting by respondents, incorrect application of procedures and inaccurate recording of results can cause non-sampling errors. Non-sampling errors are difficult to measure and the SCU assumed that, as a result of the AEC putting in place appropriate procedures and processes to undertake the review and record the results, non-sampling errors would be small. As the 2003 SAF pilot achieved high response rates from electors, the risk of inaccurate reporting by respondents also was assessed as being low.

Sampling error is caused by the inability to examine the whole population. In taking a sample (rather than reviewing the whole population) there is a risk that the sample might not truly reflect the whole population. The measure of sampling error is referred to as relative standard

[5] Habitation reviews were the traditional method used by the AEC for reviewing the roll up until 1999. They involved review officers reviewing (by doorknocking) nearly all addresses and confirming the eligible enrolments at those addresses.

[6] This was an exercise loosely based on the ANAO and JSCEM recommendations undertaken by the AEC to test the basic concepts and processes involved in a sample review of the rolls.

error (RSE) – the lower the RSE, the more reliable the projections. The SCU provided the following table as a guide for interpreting the reliability of information at different RSE levels.

RSE	Accuracy
Less than 5%	Highly reliable
Between 5% and 10%	Reliable
Between 10% and 15%	Exercise some caution in interpreting results
Greater than 15%	Exercise caution in interpreting results – broadly indicative information only.

Variability of data

In addition to considering the required accuracy level, the SCU considered the variability of the data amongst jurisdictions, such as stability or mobility of the population in any particular state or territory. The SCU advice was that as Queensland was the least populous of the three states included in the 2003 SAF pilot, but exhibited the highest level of variability, the variability for Queensland, if applied to the other less populous states and territories, would be the most conservative assumption and so would reduce the risk of not having sufficient sample size. In essence, the higher the variability and the smaller the population size, the larger the sample size has to be in order to ensure a statistically valid sample and reliable results.

Geographical units used to calculate sample sizes

The geographical unit used in determining sample sizes for the SAF is the Census Collection District (CCD). The ABS divides Australia into geographical areas for the purpose of collecting and disseminating statistics, the CCD being the smallest geographic area.[7] CCDs contain, on average, about 225 dwellings but in rural areas the number of dwellings is smaller. As CRU is being tested in the SAF, only CCDs in which CRU occurs are included in the population from which the sample is drawn; in 2004 these accounted for 34,951 (or 95.54 per cent) of the 36,581 CCDs in Australia.

From the information provided by the AEC, the SCU produced the recommended sample sizes for each jurisdiction at the various RSE levels contained in the table on the following page. After the 2005 SAF the AEC will ask the ABS SCU to review these sample sizes to take into account the SAF results so far obtained.

[7] The AEC's own geographical area building block within the RMANS Address Register, used for applying lists of addresses and electors to electoral boundaries (federal divisions, state electorates, districts and provinces, and local government external and internal boundaries), are called Geographic Database Areas (GDBs). GDBs generally equate to CCDs, or a split CCD where a federal, state/territory or local government boundary crosses the CCD. The boundaries of a GDB usually coincide with a CCD and, although a CCD might contain more than one GDB, within the AEC the terms are interchangeable. GDBs are also referred to as 'walks', as they have been traditionally used as a measure of workload for review officers undertaking doorknocking.

	Sample size (CCDs) required to meet RSE constraints				
	1% RSE	2.5% RSE	5% RSE	7.5% RSE	10% RSE
NSW	1,128	197	50	23	13
Vic	538	91	23	11	6
Qld	1,458	283	73	33	19
WA	1,194	273	73	33	19
SA	1,082	265	72	33	19
Tas	676	231	69	32	19
ACT	360	178	64	31	18
NT	192	124	55	29	17
Australia	6,628 (0.5% RSE)	1,641 (1.2% RSE)	479 (2.5% RSE)	225 (3.7% RSE)	130 (4.9% RSE)

Note: For SAF purposes the RSE constraints are set at the state/territory level; the expected RSE at a national level are provided in brackets in the last row.

Sample size used for the SAF

In determining sample size the AEC needed to consider reliability and the practical and financial implications. Although the aim was to achieve as high a reliability factor as possible, with larger sample sizes other issues arise including the timing of fieldwork. For example, the advice given by the SCU was that the fieldwork should be undertaken at the same time across Australia, and in a short timeframe. This would ensure the national statistical validity of the results; if fieldwork was done at different times in different jurisdictions the AEC would be unable to draw any conclusions on a national basis.

After examining all the issues, the AEC has decided that the 7.5 per cent RSE level will be applied. This will provide results that are reliable at a state/territory level and highly reliable at a national level. We therefore undertake a random selection of 225 CCDs throughout Australia, apportioned by state and territory according to the specifications provided by the SCU in the above table. So there is no bias in the selection, the AEC uses proprietary random number generator software to select the actual CCDs for the SAF.

Fieldwork

Timing of the review

The SCU advised of three important aspects regarding the timing of fieldwork:

- frequency of fieldwork;
- the actual time of year; for example, away from events such as state/territory elections or other events which would affect the quality of the rolls and hence distort results; and
- period of time over which the fieldwork is undertaken.

These requirements pose some difficulties for the AEC. The electoral calendar will always be different in each state and territory and therefore the timing of a national review will affect

results in individual jurisdictions to different degrees. The major factors regarding the timing of the SAF are:

- difficulties in finding a time when no state or territory electoral events are planned;
- that several jurisdictions indicated a preference for undertaking fieldwork during daylight saving time; and
- ensuring that the fieldwork and follow-up is completed well before any expected electoral event.

After considering these factors, to date the AEC has settled on late February-early March to undertake the SAF, as the warmer weather and longer daylight hours makes it a more suitable time for doorknocking. Review officers usually undertake fieldwork in the selected CCDs over a period of 16 days, with divisional staff processing results for about four weeks after that. All up, the AEC currently allows approximately 42 days for fieldwork to be completed and the majority of information required for the SAF to be entered into RMANS.

Undertaking the reviews

The role of a review officer is to contact residents within defined areas to ensure that all eligible people are enrolled and that electors who have changed address update their enrolment to their current address. That is, at each address contacted, the review officer:

- confirms the enrolment status of electors at that address;
- attempts to enrol any eligible unenrolled residents (or informs the AEC if the residents are ineligible); and
- informs divisional staff of persons who no longer live there but are still enrolled for that address.

Review officers also check the accuracy of Address Register information during their review, either by confirming that existing information is correct or recording any changes noted, for example if a house has been demolished and is now a block of units, if a residence is a holiday home, and so on.

At the completion of the review the information collected by review officers is returned to the relevant divisional office for processing into RMANS by divisional staff.

As would be expected with a random sample of CCDs, the types of issues arising and the level of difficulty vary considerably amongst the CCDs selected for the SAF. CCDs are a mixture of inner and outer metropolitan, regional centres, rural and remote areas across each state and territory. The sample often includes CCDs that would not normally be reviewed by doorknocking because of accessibility issues, security or remoteness. Nevertheless, it is essential that all CCDs randomly selected for the sample are reviewed and so the AEC makes special arrangements to cover difficult circumstances. For example, the AEC might pay review officers a (higher) rural rate, hire four-wheel drive vehicles for remote CCDs, or for areas with difficult terrain, or employ two review officers for CCDs where there are security concerns.

Non-Attendance Cards

If no residents are at home when a review officer visits, he/she is required to make one return visit on another day, and at a different time of the day. After a second unsuccessful attempt,

the review officer leaves a non-attendance card (NAC) at that address. The NAC lists all the electors currently enrolled for that address and asks the resident(s) to check the list, record any changes, and return the NAC to the divisional office in the reply paid envelope provided. SAF procedures require divisional staff to follow-up the return of NACs.

Data processing

The AEC developed a specific RMANS sub-system for the input of SAF information by divisional staff and to produce the reports on SAF results. Although part of RMANS, this sub-system is separate from the normal day-to-day processing segment, allowing the information collected during the SAF to be readily identified, collated and reported. The AEC continues to refine the SAF computer programs – to improve the ease and efficiency of data input by staff and develop further the reports and statistics prepared from SAF data.

Removing electors that have left their enrolled address

The Australian population today is more mobile and tends to move more often than was the case in the past; the ABS estimates that 20 per cent of Australians move per year. As a result any physical checking of the rolls, for example through fieldwork (including the SAF), will identify electors that no longer live where they are enrolled.

When we find such electors we are required by law to remove them from the rolls.[8] Electors identified during the SAF as not living at their enrolled address are entered into the Automatic Objection System in RMANS so that the process of removing them from the rolls can commence.

Eligible people that are not enrolled

In addition to identifying people that have left their current enrolled addresses, the SAF also identifies potentially eligible people that currently are not enrolled or whose information is not accurate. As enrolment is compulsory for eligible Australian citizens, there is an expectation that all those entitled will enrol and vote.[9]

The Potential Elector (PE) System within RMANS, formerly known as the Compulsory Enrolment System, has been operating since the mid-1990s. It is a database of names and addresses of apparent eligible persons identified during fieldwork who are not enrolled or whose existing enrolments are incorrect. The AEC contacts these people to encourage them to enrol or update their enrolments.

Procedures manuals and other assistance

Comprehensive procedures manuals are available on the AEC intranet for use by staff involved in the SAF. In addition, the AEC developed a Review Officer Manual for temporary staff undertaking SAF fieldwork. The AEC reviews these manuals after each SAF and makes any revisions necessary.

To further assist staff involved with the SAF, commencing in 2005 each AEC Head Office nominated a SAF coordinator who was responsible for the conduct of the SAF in that state or territory. In addition to providing a point of local contact, the SAF coordinator's duties

[8] ss.114-118 *CE Act* contain the requirement to remove electors from the rolls and the procedures (called objection action) that the AEC must follow in removing people from the rolls.

[9] *CE Act*, compulsory enrolment and transfer, s.101; compulsory voting, s.245.

include ensuring that SAF processing and follow-up is completed within the jurisdiction according to schedule. There is also a helpdesk service provided by the Roll Integrity Unit in Central Office and an email group consisting of all divisions involved in the SAF (and other relevant staff) is established to ensure that information is circulated to all in a timely manner.

Audit of SAF processing

As SAF results are reported internally and externally (for example, to the Minister, the JSCEM and in the AEC's annual report), it is imperative that the AEC and stakeholders have confidence in those results.

To ensure the quality of SAF information, the AEC undertakes a program of post-SAF audits to assess the accuracy and completeness of divisional processing of the information collected during fieldwork. For the audit a sample of CCDs is selected from each state and territory to give a good coverage of the different characteristics; metropolitan, regional and rural, houses, apartments and farms, and so forth. Experienced AEC staff then check the samples' documentation for consistency in applying AEC procedures and that the information contained has been entered accurately and completely during processing. Any errors found are reported back to the relevant divisional office for correction.

In addition to error detection and correction, the audit program assists the AEC to develop targeted training, revise procedures and manuals, and assists in preparing for future SAFs.

Enrolment performance indicators and measures

Introduction

The AEC is developing and refining its performance indicators relating to the roll management functions; to improve the precision of our roll measurement and the quality and quantity of roll-related information that we provide to our stakeholders. The SAF is part of this process and allows the AEC to measure better some of the performance indicators relating to enrolment, these are:

- enrolment participation;
- the completeness of divisional rolls; and
- the accuracy of the rolls.

Measuring roll-related indicators, particularly completeness and participation, is problematic for the AEC as there is no single list of persons entitled to be enrolled, for example a register of Australian citizens (whether born or naturalised), against which electoral rolls can be compared. Therefore, the AEC needs to identify and quantify the number of eligible people that are not enrolled, for example through the SAF, before we can estimate the proportion of people that are enrolled.

Accuracy is easier to measure, as current enrolments are either accurate or not. However, even with such a simple definition certain assumptions are made in measuring accuracy. When the AEC talks of electoral roll accuracy this relates to the address at which an elector enrols. As mentioned earlier, the importance of an elector's address results from enrolment and voting in Australia being based on where people actually live; only people living within a particular area are eligible to vote at events relating to that area. The consequence of this is a natural, and reasonable, expectation that electors will actually live at the address for which

they are enrolled. The Commonwealth Parliament in 2004 reinforced this expectation by amending the *Commonwealth Electoral Act 1918* to relate enrolment specifically to address.

In respect to roll accuracy the AEC also considers that this relates to *existing* enrolments only; in other words, how many electors on the roll do not require any change to their current information?

The AEC recognises that because of these issues reported performance results could vary considerably depending on the definitions used and the assumptions made in their calculation. In calculating performance indicators there are certain unknown factors where the AEC has to make assumptions based on other information. For example, to derive meaningful and reliable performance information for the SAF in some instances the AEC adjusts the initial results obtained from the fieldwork. Where the AEC considers such adjustments are necessary, it clearly states the relevant facts when reporting the performance results.

The following sections provide information on the various roll-related performance indicators measured by the SAF.

Enrolment Participation

Participation attempts to measure the engagement of the eligible population and their involvement in the electoral process through their enrolment to vote (irrespective of whether or not they actually do vote). Enrolment is compulsory for eligible Australian citizens but people do intentionally avoid enrolment for various reasons; to protect their privacy or through apathy to, or distrust of, the political process.

For the purposes of the SAF, enrolment participation is defined as the percentage of eligible persons who are enrolled somewhere in the country. In calculating participation, the AEC ignores whether electors are enrolled for the correct electoral division or at the correct address; these factors are dealt with under completeness and accuracy respectively.

When determining the participation rate, the AEC compares the current roll, less deceased electors and ineligible persons, to the estimated total population who should be enrolled as indicated by the SAF. In doing this the AEC assumes that SAF fieldwork identifies all such eligible persons; that through our policies and procedures, and our staff rigorously and consistently applying those policies and procedures, we will identify all people who are and should be enrolled. For the SAF, the participation formula is:

$$\text{Enrolment participation} = \frac{(\mathbf{a}\ \textit{less}\ \mathbf{b}\ \textit{less}\ \mathbf{c}\ )}{(\mathbf{a}\ \textit{less}\ \mathbf{b}\ \textit{less}\ \mathbf{c}\ \textit{plus}\ \mathbf{f}\ \textit{plus}\ \mathbf{g}\ \textit{plus}\ \mathbf{h})} \times 100$$

where:

- **a** = the number of electors in the sample at start of the SAF;
- **b** = deceased persons;
- **c** = persons found ineligible on the grounds of non-citizenship or unsound mind;
- **f** = new enrolments;
- **g** = re-enrolments; and
- **h** = the estimated number of new enrolments and re-enrolments in the Potential Elector System.

The starting point for calculating participation is the number of electors in the sample at the start of the SAF. From this we subtract deceased electors and ineligible persons identified during the SAF; this gives an adjusted figure for the population of electors we have enrolled. Deceased and ineligible people are subtracted from both the numerator and the denominator in the above formula because these people are on the rolls in error; to not remove them from the participation calculation would make the results more favourable than would otherwise have been the case.

Despite the comprehensiveness of our enrolment policies and procedures, the AEC does occasionally identify ineligible persons on the rolls. Non-citizens can become enrolled due to confusion over their citizenship status. They might indicate on their enrolment form that they are citizens when in fact they are not. They might also be eligible British Subjects who thought they were enrolled on 26 January 1984[10] but who the AEC subsequently discovers were not enrolled at that time and are therefore ineligible.

Similarly, each year a small number of people already enrolled are removed on 'unsound mind' grounds, as they are no longer capable of understanding the nature and significance of enrolment and voting.

To the adjusted figure for the population of electors we have enrolled, the AEC adds new and re-enrolments identified by the SAF, as well as an estimate of the number of people in the PE System that represent new enrolments or re-enrolments. The PE System contains people identified during the SAF as apparently eligible to enrol but who do not appear on the rolls for the sample being reviewed. Such persons might be enrolled elsewhere, or they might be new enrolments, or re-enrolling after being removed from the rolls in the past. In measuring participation, to avoid double counting only the latter two are included. The AEC calculates this estimate by determining the proportion of total number of enrolment forms processed during the SAF that were new enrolments or re-enrolments and then applies this ratio to the total number of people entered on the PE System.

Completeness of the divisional rolls

Completeness of the divisional rolls, like participation, aims at measuring the proportion of the eligible population that actually are enrolled and relates to the completeness element in our definition of roll integrity – *all individuals who are entitled to enrol are enrolled*.

Enrolment participation and completeness are very similar measures. The distinctive features between the two indicators are that participation considers whether a person is enrolled at all, whereas completeness also considers whether that person is enrolled in his/her correct division. In addition, participation can be measured using external data, such as ABS statistics. However, those ABS data are not reliable when disaggregated to the divisional level, so they cannot be used for measuring completeness of divisional rolls. Currently the AEC considers the SAF to be the only effective way of measuring divisional roll completeness.

The measure of roll completeness can vary considerably depending on the definition used and how the completeness figure is calculated. The AEC defines completeness of the roll as the number of electors on the roll in the electoral division at the start of the SAF as a percentage

[10] Until the 1980s a person had to be a British Subject to be entitled to enrol and vote in Australia. Amendments made in 1983 to the *Commonwealth Electoral Act 1918* meant that from 26 January 1984 only Australian citizens are eligible to enrol. Only British Subjects on the rolls at that date retain their entitlement to be enrolled.

of the estimated number of eligible people (as determined by the SAF) who should be on the roll for that division. The formula for this indicator is:

$$\text{Enrolment completeness rate} = \frac{(\mathbf{a}\ \textit{less}\ \mathbf{b}\ \textit{less}\ \mathbf{c}\ \textit{less}\ \mathbf{d})}{(\mathbf{a}\ \textit{less}\ \mathbf{b}\ \textit{less}\ \mathbf{c}\ \textit{less}\ \mathbf{d}\ \textit{plus}\ \mathbf{f}\ \textit{plus}\ \mathbf{g}\ \textit{plus}\ \mathbf{j}\ \textit{plus}\ \mathbf{k})} \times 100$$

where:

- **a** = the number of electors in the sample at start of the SAF;
- **b** = deceased persons;
- **c** = persons found ineligible on the grounds of non-citizenship or unsound mind;
- **d** = the estimate of the number of objections for persons who have left the division;
- **f** = new enrolments;
- **g** = re-enrolments;
- **j** = electors transferring into the division from another division, state or territory; and
- **k** = the estimate of number of persons in PE System new to the division.

Under this formula, the result will give an average for completeness for divisional rolls at the state/territory and national levels.

As is the situation when measuring participation, the AEC adjusts the number of electors at the start of the SAF for persons found to be ineligible. In addition to removing deceased and ineligible people, as is done in calculating participation, the completeness calculation being a measure of a divisional roll is adjusted for electors that have left the division.

However, in calculating the completeness of the rolls to deduct all objections identified during the SAF (that is, people identified as not living at their enrolled address who will be removed from the roll) from the starting enrolments figure would produce an understated result. Therefore, the AEC adjusts the objection figure to reflect an estimate of those electors who still live somewhere in the division. We derive this estimate by weighing the total number of objections in the same ratio that inter-divisional and interstate movements comprise of total transactions as reported in the AEC's last three annual reports.[11] For the 2005 SAF inter-divisional and interstate enrolments were calculated at 44.28 per cent of transactions.

Similarly, the AEC makes an adjustment to include only the people in the PE System that are new enrollees to the division. We calculate this estimate by determining the proportion of enrolment forms processed during the SAF that were new enrolments, re-enrolments and transfers from other divisions, states or territories, then apply this ratio to the total number of people entered on the PE System.

Accuracy of the rolls

As mentioned previously, accuracy of the roll relates to the information currently held by the AEC on electors' places of residence. The integrity element for accuracy states that *the individual is enrolled for the address at which he/she is entitled to be enrolled*. Therefore, for the SAF the AEC defines the accuracy of the rolls as the percentage of electors currently enrolled for the address at which they are living; that is, it measures those electors in the

[11] This is done to even out any differences in the number of total transaction processed between years.

sample who do not require any change to their existing enrolment information. The formula used for calculating roll accuracy is:

$$\text{Enrolment accuracy rate} = \frac{(\mathbf{a} \textit{ less } \mathbf{b} \textit{ less } \mathbf{c} \textit{ less } \mathbf{e} \textit{ less } \mathbf{l})}{\mathbf{a}} \times 100$$

where:

- **a** = the number of electors in the sample at start of the SAF;
- **b** = deceased persons;
- **c** = persons found ineligible on the grounds of non-citizenship or unsound mind;
- **e** = persons who are no longer at their enrolled addresses (objections – gone); and
- **l** = all other changes to existing enrolments (not already identified in the Objection System or as amendments.)

Under this measurement, even if electors are enrolled in the correct division but need to update their address details they are not considered to be accurately enrolled; this reflects the current legislative requirements for address-based enrolment.

Address Register performance indicators and measures

The AEC maintains the Address Register in order that each elector's address can be identified to a specific parcel of land. The following are Address Register terms relevant to address-related performance indicators:

- **Enrollable.** Enrollable addresses those where persons live and for which they can legitimately enrol. They are actual permanent residences such as houses and units.
- **Unenrollable.** Unenrollable addresses are those where persons do not permanently live and for which persons cannot legitimately enrol. They include addresses such as commercial premises, parks and vacant allotments.
- **Active.** Active addresses are those currently in use, whether they are enrollable or unenrollable addresses.
- **Inactive.** This term is used for addresses that have previously existed but have been superseded by a new address that does not resemble the original. An example is where a number of houses have been demolished to make way for a highway – the former addresses of the houses can never be resurrected.
- **Land use codes.** These are AEC-specific standard codes attached to addresses that describe the types of address and their use, for example houses, residential units, parks, vacant allotments, holiday homes, nursing homes, motels and so forth. While not crucial to the management of the rolls, this is nevertheless useful information in the management of CRU activities, for example in distinguishing holiday units from permanent residential units, and a standard residence from, say, a boarding house where it is more likely to have persons of multiple surnames enrolled.

The AEC performance indicators relevant to the Address Register are:

- the completeness of the Address Register; and
- the accuracy of the Address Register.

Completeness of the Address Register

This indicator measures the number of valid active enrollable (that is, residential) addresses currently on the AEC's Address Register compared to the number of actual valid active enrollable addresses identified at the SAF. Completeness of the Address Register is included in the integrity element for processing correctness, namely; *information provided by individuals and organisations is entered correctly, completely and in a timely manner on the roll, **addresses are correctly and completely described, classified and aligned***. The formula for calculating this indicator is:

$$\text{Address Register completeness} = \frac{(\mathbf{m} \textit{ less } \mathbf{n} \textit{ less } \mathbf{p} \textit{ less } \mathbf{r})}{(\mathbf{m} \textit{ less } \mathbf{n} \textit{ less } \mathbf{p} \textit{ less } \mathbf{r} \textit{ plus } \mathbf{s} \textit{ plus } \mathbf{t} \textit{ plus } \mathbf{w})} \times 100$$

where:

- **m** = the number of active enrollable addresses in the sample at start of the SAF;
- **n** = active enrollable addresses changed to inactive addresses;
- **p** = active enrollable addresses deleted from the Address Register;
- **r** = enrollable addresses changed to unenrollable addresses;
- **s** = inactive addresses changed to active enrollable addresses;
- **t** = unenrollable addresses changed to enrollable addresses; and
- **w** = active enrollable addresses added to the Address Register during the SAF.

Currently enrollable addresses only are measured, as the results from the 2004 SAF revealed inconsistencies amongst states and territories on the recording of unenrollable addresses and the priority given to this aspect of Address Register data maintenance. It was evident from the 2004 results that there was under-recording of unenrollable addresses, to the extent that any calculations that included unenrollable addresses would be unreliable. Although the AEC is addressing this issue, by reviewing its procedures for maintaining addresses and providing more training to staff on Address Register maintenance, at present only enrollable addresses are included when measuring the completeness and accuracy of the Address Register. When the AEC is confident that a consistent approach to recording and managing unenrollable addresses has been achieve in all states and territories it will consider including these in calculating address-related performance indicators.

As is the case with enrolment indicators, the AEC has to adjust SAF data to derive a true picture of our performance. Therefore, the number of active enrollable addresses in the sample at the start of the SAF is adjusted for addresses found to have changed to unenrollable or inactive, or that were deleted. These addresses are removed from both the numerator and the denominator in the above formula so that the result is not overstated (if these are not removed they will cancel out any addresses added to the Address Register and so make the Register appear more complete than it might actually be). This results in an adjusted number of active enrollable addresses at the start of the SAF to which we add the addresses changed to active enrollable, and those relevant addresses added to the Register, to produce the denominator in the formula.

Accuracy of the Address Register

Address accuracy relates to the quality of the information we hold on active enrollable addresses on our Address Register. Like address completeness, the accuracy of the Address Register is assessed under the *processing correctness* integrity element and is defined as

being the number of correctly described, classified and aligned (that is, allocated to the correct CCD)[12] addresses on the Address Register as a percentage of the total number of addresses on the Address Register. The formula for calculating this is:

$$\text{Address Register accuracy} = \frac{(\mathbf{m} \textit{ less } \mathbf{n} \textit{ less } \mathbf{p} \textit{ less } \mathbf{r})}{(\mathbf{m} \textit{ less } \mathbf{n} \textit{ less } \mathbf{p} \textit{ less } \mathbf{r} \textit{ less } \mathbf{y} \textit{ less } \mathbf{z})} \times 100$$

where:

m	=	the number of active enrollable addresses in the sample at start of the SAF;
n	=	active enrollable addresses changed to inactive addresses;
p	=	active enrollable addresses deleted from the Address Register;
r	=	active enrollable addresses changed to unenrollable addresses;
y	=	active enrollable addresses that changed land use code; and
z	=	active enrollable addresses recorded in the wrong CCD.

As is the case with Address Register completeness, the AEC currently includes only enrollable addresses when calculating this indicator. If any information that we currently hold on an active enrollable address needs to be changed as a result of the SAF – whether a change in type (to unenrollable or inactive), deletion (as it does not exist), or has incorrect information on its characteristics (such as the wrong land use code or being in the wrong CCD) – then that address is considered inaccurate.

Refinement of the SAF performance indicators

The AEC continues to refine the way it measures the quality of electoral rolls, including measures used by the SAF, as we develop new systems and procedures to improve our capacity to extract performance-related information and gain more experience of undertaking sample checking of the rolls. The objective of this process is to improve the quality and quantity of information that we provide our stakeholders, to allow them to make informed assessments of the AEC's achievements and the quality of our management of electoral rolls.

As the AEC refines methodologies, procedures and systems it will document those changes so that our activities remain accountable and transparent.

Reporting SAF results

The AEC reports the results obtained from the SAF in its Annual Report (under Outcome 1 – An Effective Electoral Roll. In addition, we produce a specific report on each SAF undertaken and these are available from our website (under Roll Integrity Unit Reports) at http://www.aec.gov.au/_content/what/publications/index.htm.

[12] This aspect of address accuracy is important, as electoral boundaries are determined based on CCD information.

Appendix 3: Tables of statistics

Table 1: **Sample Audit Fieldwork – Enrolment participation rates**

	Enrolment at start	Deceased	Ineligible	Eligible Enrolment at start	New enrolments	Re-enrolled	PE estimate – new and re-enrolled	Enrolment at end	Participation
	(a)	**(b)**	**(c)**	(i)	**(f)**	**(g)**	**(h)**	(ii)	(iii)
NSW	9,263	2	0	9,261	71	49	50	9,431	98.2%
Vic	4,811	3	1	4,807	18	19	20	4,864	98.8%
Qld	10,303	1	0	10,302	78	65	47	10,492	98.2%
WA	11,501	0	5	11,496	44	40	50	11,630	98.9%
SA	13,441	5	3	13,433	121	78	88	13,720	97.9%
Tas	9,494	0	0	9,494	70	36	65	9,665	98.2%
ACT	16,662	5	1	16,656	72	59	81	16,868	98.7%
NT	10,708	4	1	10,703	94	105	116	11,018	97.1%
National	86,183	20	11	86,152	568	451	517	87,688	98.4%

Column (i) = **(a)** - **(b)** - **(c)** Column (ii) = (i) + **(f)** + **(g)** + **(h)** Column (iii) = (i) / (ii) x 100

Column references in bold relate to the variables in the above formulae, which are discussed in detail in *The SAF Methodology* documentation.

Notes:

Differences in column and row totals are due to rounding.

PE estimate – new and re-enrolled: An estimate of the number of persons in the Potential Elector (PE) System who were new enrolments or re-enrolments. It is calculated by applying the same ratio as new enrolments and re-enrolments represent within all the enrolment forms processed during the SAF to the total (gross) number of persons in the PE System. (Refer to the SAF Methodology documentation for an explanation of how this is derived).

The national participation rate of 98.4 per cent is calculated using a formula advised by ABS SCU, which weighs the results from each state and territory, based on their population sizes and proportion of the sample selected for review, before adding these to get a national weighted average result.

Table 2: **Sample Audit Fieldwork – Enrolment completeness**

	Enrolment at start	Deceased	Ineligible	Net objections	Base enrolled	New Enrolments	Re-enrol	Transfers in	Potential Electors	Enrolled at end	Completeness
	(a)	**(b)**	**(c)**	**(d)**	(i)	**(f)**	**(g)**	**(j)**	**(k)**	(ii)	(iii)
NSW	9,263	2	0	295	8,966	71	49	140	140	9,366	95.7%
Vic	4,811	3	1	128	4,679	18	19	28	55	4,799	97.5%
Qld	10,303	1	0	413	9,889	78	65	172	118	10,322	95.8%
WA	11,501	0	5	379	11,117	44	40	126	153	11,479	96.8%
SA	13,441	5	3	403	13,030	121	78	212	221	13,663	95.4%
Tas	9,494	0	0	337	9,157	70	36	78	131	9,472	96.7%
ACT	16,662	5	1	539	16,117	72	59	221	270	16,739	96.3%
NT	10,708	4	1	626	10,077	94	105	423	390	11,089	90.9%
National	86,183	20	11	3,120	83,032	568	451	1,400	1,478	86,929	96.3%

Column (i) = **(a)** - **(b)** - **(c)** - **(d)** Column (ii) = (i) + **(f)** + **(g)** + **(j)** + **(k)** Column (iii) = (i) / (ii) x 100

Column references in bold relate to the variables in the above formulae, which are discussed in detail in *The SAF Methodology* documentation.

Notes:

Differences in column and row totals are due to rounding.

Net Objections = an estimate of number of objections for persons who have left the division (refer to the SAF Methodology documentation for an explanation of how this is derived).

Transfers In = electors transferred from another division or state/territory.

Potential Electors = an estimate of number of persons in Potential Elector (PE) System that are new to the Division (refer to the SAF Methodology documentation for an explanation of how this is derived).

The national completion rate of 96.3 per cent is calculated using a formula advised by ABS SCU, which weighs the results from each state and territory, based on their population sizes and proportion of the sample selected for review, before adding these to get a national weighted average result.

Table 3: **Sample Audit Fieldwork – Enrolment accuracy**

	Enrolment at start	Deceased	Ineligible	Objections (gone)	All other changes	No change	Accuracy
	(a)	**(b)**	**(c)**	**(e)**	**(l)**	(i)	(ii)
NSW	9,263	2	0	667	137	8,457	91.3%
Vic	4,811	3	1	288	63	4,456	92.6%
Qld	10,303	1	0	932	187	9,183	89.1%
WA	11,501	0	5	857	278	10,361	90.1%
SA	13,441	5	3	909	242	12,282	91.4%
Tas	9,494	0	0	762	170	8,562	90.2%
ACT	16,662	5	1	1,218	437	15,001	90.0%
NT	10,708	4	1	1,413	228	9,062	84.6%
National	86,183	20	11	7,046	1,742	77,364	91.1%

Column (i) = **(a)** - **(b)** - **(c)** - **(e)** - **(l)** Column (ii) = (i) / **(a)** x 100

Column references in bold relate to the variables in the above formulae, which are discussed in detail in *The SAF Methodology* documentation.

Notes:

Enrolment accuracy refers to the accuracy of electors already on the Divisional roll, so persons who enrol or re-enrol during the SAF are not included in calculations for accuracy (these people are considered in the measurement of completeness). Therefore, the number of changes in the above table does not equal the number of enrolment forms processed mentioned in previous tables.

The national accuracy rate of 91.1 per cent is calculated using a formula advised by ABS SCU, which weighs the results from each state and territory, based on their population sizes and proportion of the sample selected for review, before adding these to get a national weighted average result.

Table 4: **Address Register completeness** (enrollable addresses only)

	Addresses at start	Changed to Inactive	Deleted	Changed to Unenrollable	Adjusted start	Changed to Active	Changed to Enrollable	Added	Active Enrollable at end	Completeness
	(m)	**(n)**	**(p)**	**(r)**	(i)	**(s)**	**(t)**	**(w)**	(ii)	(iii)
NSW	5,411	3	87	44	5,277	65	5	26	5,373	98.2%
Vic	2,610	11	66	72	2,461	136	6	55	2,658	92.6%
Qld	6,315	41	109	194	5,971	150	3	99	6,223	96.0%
WA	7,235	2	56	138	7,039	121	12	75	7,247	97.1%
SA	8,255	20	45	146	8,044	133	25	71	8,273	97.2%
Tas	5,625	1	65	136	5,423	57	18	37	5,535	98.0%
ACT	9,463	0	1	6	9,456	35	180	0	9,671	97.7%
NT	6,849	3	12	126	6,708	101	0	83	6,892	97.3%
National	51,763	81	441	862	50,379	798	249	446	51,872	96.2%

Column (i) = **(m)** - **(n)** - **(p)** - **(r)** Column (ii) = (i) + **(s)** + **(t)** + **(w)** Column (iii) = (i) / (ii)

Column references in bold relate to the variables in the above formulae, which are discussed in detail in *The SAF Methodology* documentation.

Notes:

The national completeness rate of 96.2 per cent is calculated using a formula advised by ABS SCU, which weighs the results from each state and territory, based on their population sizes and proportion of the sample selected for review, before adding these to get a national weighted average result.

Table 5: **Address Register accuracy** (enrollable addresses only)

	Addresses at start	Changed to Inactive	Deleted	Changed to Unenrollable	Land Use Code changes	Addresses in wrong CCD	Addresses with no change	Accuracy
	(m)	**(n)**	**(p)**	**(r)**	**(y)**	**(z)**	(i)	(ii)
NSW	5,411	3	87	44	173	0	5,104	94.3%
Vic	2,610	11	66	72	85	23	2,353	90.2%
Qld	6,315	41	109	194	67	1	5,903	93.5%
WA	7,235	2	56	138	85	38	6,916	95.6%
SA	8,255	20	45	146	151	15	7,878	95.4%
Tas	5,625	1	65	136	82	86	5,255	93.4%
ACT	9,463	0	1	6	64	0	9,392	99.3%
NT	6,849	3	12	126	39	11	6,658	97.2%
National	51,763	81	441	862	746	174	49,459	93.4%

Column (i) = **(m)** - **(n)** - **(p)** - **(r)** - **(y)** - **(z)** Column (ii) = (i) / **(m)** x 100

Column references in bold relate to the variables in the above formulae, which are discussed in detail in *The SAF Methodology* documentation.

Notes:

The national accuracy rate of 93.4 per cent is calculated using a formula advised by ABS SCU, which weighs the results from each state and territory, based on their population sizes and proportion of the sample selected for review, before adding these to get a national weighted average result.

Table 6: **Sample Audit Fieldwork – Summary of fieldwork**

	Addresses					Electors				
	Addresses at start	NACs		Refusals	SABs	New electors and changes	EFs processed		Gones	Deceased
	(Enrollable only)	Number	Per cent				Number	Per cent		
NSW	5,411	759	14.02	14	6	714	504	70.59	667	2
Vic	2,610	294	11.26	6	20	225	147	65.33	288	3
Qld	6,315	614	9.72	16	2	775	583	75.23	932	1
WA	7,235	988	13.65	15	11	612	385	62.91	857	0
SA	8,255	1,241	15.03	21	18	1,114	773	69.39	909	5
Tas	5,625	479	8.51	9	7	577	357	61.87	762	0
ACT	9,463	1,732	18.30	25	26	1,291	796	61.66	1,218	5
NT	6,849	1,595	23.28	31	413	1,263	798	63.18	1,413	4
National	51,763	7,702	14.88	137	503	6,571	4,343	66.09	7,046	20

Notes:

NACs: Non Attendance Cards (forms left when no residents were at home when the Review Officer called).

SABs: Security Access Buildings. The high number of SABs in the Northern Territory sample is correct – in one suburb alone 14 buildings accounted for 226 of the SAB addresses, with four buildings in a second suburb accounting for another 46 addresses.

New electors and changes: Enrolment forms processed plus electors entered into the Potential Elector System less records culled from that system.

EFs processed: Enrolment forms collected plus forms returned by mail. This figure is all the enrolment forms processed (for electors 18 years or older only) that had a source code 'A' (meaning that they were generated by the SAF) whether they were for new enrolments, changes to existing enrolments or no-change enrolments (that is, where the information provided by the elector is the same as that already on the roll). The percentage figures refer to the proportion of 'New electors and changes' that the AEC received and processed an enrolment form for; if an enrolment form is received and processed this avoids the need for follow up action, and both confirms and augments the information collected by Review Officers.

Table 7: **Sample Audit Fieldwork – Summary of enrolment forms processed**

	Enrolment at start	Enrolment forms processed	New enrolments 18 years +	Re-enrolments	Electors who transferred . . .			Non-address changes	No change enrolments	Amendments
					within the Division	from another Division	from interstate			
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(j)	(k)
NSW	9,263	504	71	49	167	115	25	15	33	29
Note 1:		*5.44%*	*14.09%*	*9.72%*	*33.13%*	*22.82%*	*4.96%*	*2.98%*	*6.55%*	*5.75%*
Vic	4,811	147	18	19	44	26	2	10	7	21
		3.06%	*12.24%*	*12.93%*	*29.93%*	*17.69%*	*1.36%*	*6.80%*	*4.76%*	*14.29%*
Qld	10,303	583	78	65	225	130	42	22	7	14
		5.66%	*13.38%*	*11.15%*	*38.59%*	*22.30%*	*7.20%*	*3.77%*	*1.20%*	*2.40%*
WA	11,501	385	44	40	126	113	13	18	27	4
		3.35%	*11.43%*	*10.39%*	*32.73%*	*29.35%*	*3.38%*	*4.68%*	*7.01%*	*1.03%*
SA	13,441	773	121	78	272	186	26	49	25	16
		5.75%	*15.65%*	*10.09%*	*35.19%*	*24.06%*	*3.36%*	*6.34%*	*3.23%*	*2.07%*
Tas	9,494	357	70	36	144	46	32	8	10	11
		3.76%	*19.61%*	*10.08%*	*40.34%*	*12.89%*	*8.96%*	*2.24%*	*2.80%*	*3.08%*
ACT	16,662	796	72	59	362	74	147	50	31	1
		4.78%	*9.05%*	*7.41%*	*45.48%*	*9.30%*	*18.47%*	*6.28%*	*3.89%*	*0.12%*
NT	10,708	798	94	105	129	262	161	16	11	20
		7.45%	*11.78%*	*13.16%*	*16.17%*	*32.83%*	*20.18%*	*2.00%*	*1.38%*	*2.50%*
National	86,183	4,343	568	451	1,469	952	448	188	151	116
		5.04%	*13.08%*	*10.38%*	*33.82%*	*21.92%*	*10.32%*	*4.33%*	*3.48%*	*2.67%*

Note 1 on proportions. In column (b) the percentage is enrolments processed to total enrolment at start of fieldwork (column a). The percentages in columns c to j are their proportion of total enrolment forms processed (column b).