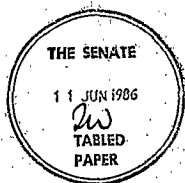




# Proposed Computer Acquisition by the Australian Audit Office

# 253

Joint Committee of Public Accounts



THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA

JOINT COMMITTEE OF PUBLIC ACCOUNTS

REPORT 253

PROPOSED COMPUTER ACQUISITION BY THE  
AUSTRALIAN AUDIT OFFICE

Australian Government Publishing Service  
Canberra 1986

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#### DUTIES OF THE COMMITTEE

Section 8.(1) of the Public Accounts Committee Act 1951 reads as follows:

Subject to sub-section (2), the duties of the Committee are:

- (a) to examine the accounts of the receipts and expenditure of the Commonwealth including the financial statements transmitted to the Auditor-General under sub-section (4) of section 50 of the Audit Act 1901;
- (aa) to examine the financial affairs of authorities of the Commonwealth to which this Act applies and of intergovernmental bodies to which this Act applies;
- (ab) to examine all reports of the Auditor-General (including reports of the results of efficiency audits) copies of which have been laid before the Houses of the Parliament;
- (b) to report to both Houses of the Parliament, with such comment as it thinks fit, any items or matters in those accounts, statements and reports, or any circumstances connected with them, to which the Committee is of the opinion that the attention of the Parliament should be directed;
- (c) to report to both Houses of the Parliament any alteration which the Committee thinks desirable in the form of the public accounts or in the method of keeping them, or in the mode of receipt, control, issue or payment of public moneys; and
- (d) to inquire into any question in connexion with the public accounts which is referred to it by either House of the Parliament, and to report to that House upon that question,

and include such other duties as are assigned to the Committee by Joint Standing Orders approved by both Houses of the Parliament.

#### PREFACE

This report is the first to be tabled by the Committee under the terms of its standing reference (passed in the House of Representatives on 8 May 1985 and the Senate on 10 May 1985) to investigate and report on proposed acquisitions of Automatic Data Processing (ADP) facilities by Commonwealth departments or authorities staffed under the Public Service Act 1922.

On 17 January 1986, Senator Walsh, the Minister Assisting the Prime Minister for Public Service Matters, advised the Committee that the Government had given in principle approval to the proposed acquisition of computing and communications facilities by the Australian Audit Office, conditional on the proposal being reviewed by the Public Accounts Committee. Subsequent submissions by the Australian Audit Office, Department of Local Government and Administrative Services, and the evidence given by representatives of the Department of Finance and the Public Service Board have raised some concerns about the Australian Audit Office's proposal and other proposals for the acquisition of computing facilities.

These concerns relate primarily to:

- the apparent difficulties of some departments in identifying and presenting a comprehensive and comprehensible statement of all costs associated with the proposal;
- the apparent reluctance of some departments to define and quantify the benefits which will result from the acquisition of ADP facilities; and
- the absence of satisfactory provisions in these proposals for the performance monitoring systems and output indicators necessary to demonstrate subsequently that these benefits are achieved.

The conclusions of this report reinforce the need for greater scrutiny of ADP acquisition proposals by both senior management of the acquiring department and by co-ordinating departments involved in the approval and acquisition process. The

Committee's findings also emphasise the responsibilities of heads of organisations and of the Department of Finance to ensure that the performance and benefits of these ADP facilities are monitored and periodically reviewed.

For and on behalf of the Committee.

Senator G Georges  
Chairman

M J Talberg  
Secretary  
Joint Committee of Public Accounts  
Parliament House  
Canberra  
28 May 1986

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7. Australian Audit Office letter of 24 April 1986.
8. Australian Audit Office letter of 14 May 1986.

ABBREVIATIONS

AAO -	Australian Audit Office
ADP -	Automatic Data Processing
AOSL -	Average Operating Staff Level
CAAT -	Computer Assisted Audit Technique
CSIRONET -	Commonwealth Scientific, Industrial and Research Organisation Network
DOLGAS -	Department of Local Government and Administrative Services
RFT -	Request for Tender

LIST OF CONCLUSIONS AND RECOMMENDATIONS

Costs

The Committee concludes that:

- the Australian Audit Office has made a serious attempt to identify the total cost of this project in accordance with the guidelines issued by the Public Service Board;
- much of the confusion surrounding the Australian Audit Office's successive attempts to present and justify the cost estimates for this project could have been avoided if the costing tables were accompanied by clear and comprehensive explanatory notes describing the nature of each item and of the absorbed costs;
- the cost estimates accompanying the Office's original submission to this Committee have been and may well continue to be the subject of some further refinement;
- there is some doubt whether the level of additional staff support which is to be provided for this project is sufficient to secure its successful implementation; and
- the level of absorption of the staff resources proposed for this project must be considered a measure of the Auditor-General's and his organisation's commitment to cost containment in the successful implementation of this project.

Benefits

The Committee concludes that:

- the proposed ADP acquisition by the Australian Audit Office is justified in terms of the improved effectiveness of the Australian Audit Office in promoting administrative efficiency and accountability in the Commonwealth public sector;
- the Australian Audit Office has not made an adequate effort to define and quantify the benefits resulting from the proposed ADP acquisition and the information systems it will support;

the process of attempting a comprehensive definition and quantification of benefits will provide a basis for the establishment of output indicators and performance measures for the proposed systems. These should be integral components of the proposed ADP system itself; and

- it is doubtful whether co-ordinating departments and agencies, including the Department of Finance and the Public Service Board, have seriously challenged or attempted to verify the benefits asserted for the Australian Audit Office's proposed ADP acquisition.

The Committee recommends that:

- 1 the benefits asserted for ADP acquisition proposals be subject to rigorous scrutiny and verification by the Department of Finance when funding approval is requested. (Paragraph 2.27)

Post Implementation Review

The Committee concludes that:

- the conduct of post implementation reviews of major ADP based projects and of the individual system applications which they incorporate, is a fundamental element of proper planning and project management practices;
- it is clearly the responsibility of heads of departments and agencies to ensure that such implementation reviews are undertaken; and
- no co-ordinating agency currently accepts that it has a responsibility, as a matter of course, to review the performance and benefits of ADP projects after their implementation.

The Committee recommends that:

- 2 all ADP acquisition proposals include detailed provision for the collection of the performance data necessary for undertaking post implementation reviews and monitoring productivity improvements and other project benefits; (Paragraph 2.33)
- 3 at the time funding approval is requested for ADP acquisitions, the Department of Finance ensure that adequate attention has been given in the proposal to the subsequent monitoring of project performance and benefits; (Paragraph 2.33) and

- 4 the Department of Finance insist that any subsequent requests for additional project funds, upgrades to existing installations and re-equipment acquisition are supported by the results of a post implementation review and a comprehensive statement of the benefits achieved to that time. (Paragraph 2.33)

#### IBM Compatability

##### The Committee concludes that:

- . the technical benefits to the Australian Audit Office in specifying that its mainframe must be IBM compatible are not persuasive;
- . there are non-technical advantages in acquiring an IBM compatible mainframe facility which would be of strategic benefit to the development of the Office's ADP capability. The main benefit appears to be the experience that its staff will acquire in the IBM compatible environment common to approximately two thirds of its major auditees; and
- . that the benefits which the Australian Audit Office asserts will result from the selection of an IBM compatible mainframe, should be able to be represented and given appropriate weightings in an open tender specification.

##### The Committee recommends that:

- 5 the 'Guidelines for ADP Acquisition' and the methodologies nominated therein be reviewed with a view to ensuring that as far as possible the non-technical advantages associated with particular tender proposals are recognised and can be given appropriate weightings. (Paragraph 2.49)

#### Software Compatability

##### The Committee concludes that:

- . the Australian Audit Office has taken reasonable steps to establish that the integration strategy and software compatibility it proposes for its ADP network are achievable using existing technology.

#### Evaluation Methodology

##### The Committee concludes that:

- . the evaluation methodologies and Request for Tender contained in the 'Guidelines for ADP Acquisition' undoubtedly have some deficiencies and are capable of being improved and refined; and
- . the current Guidelines have been endorsed by government and until such time as they are amended they should be followed.

##### The Committee recommends that:

- 6 the Department of Local Government and Administrative Services expedite its current review of the 'Guidelines for ADP Acquisition' with a commitment to issue a revised set of Guidelines by the end of 1986; (Paragraph 2.63) and
- 7 all departments and other organisations with an interest submit their comments and recommendations on the contents and operation of the Guidelines to the Department of Local Government and Administrative Services and to this Committee. (Paragraph 2.63)



## CHAPTER 1

### INTRODUCTION

- . Background
- . The Australian Audit Office
- . Overview of the Proposal

#### Background

1.1 This proposal from the Australian Audit Office (AAO) is the second proposal to be examined by the Committee under the terms of its standing reference (passed in the House of Representatives on 8 May 1985 and the Senate on 10 May 1985) to investigate and report on proposed acquisitions of automatic data processing (ADP) facilities by Commonwealth departments and authorities staffed under the Public Service Act 1922.

1.2 The terms of the standing reference provide that major proposals be referred by the Minister responsible for the proponent department or authority to the Committee for its examination and report. On 17 January 1986 Senator Walsh, the Minister Assisting the Prime Minister for Public Service Matters, wrote to the Chairman of the Committee indicating that the Government had given in principle approval to the proposed acquisition of computing and communications facilities by the Australian Audit Office, conditional on the proposal being reviewed by the Public Accounts Committee.

1.3 The submission made to the Committee by the Australian Audit Office on 26 February 1986<sup>1</sup> followed the form of the guidelines issued by the Committee in May 1985<sup>2</sup>. In summary, the Committee's guidelines require a submission to describe the nature of, and justification for the acquisition including its cost effectiveness, associated technical and other risks, industrial relations issues, provision for Australian industry participation and the proposed method of acquisition.

1.4 After an initial review of AAO's submission the Committee sought further information from AAO on several matters<sup>3</sup>. A supplementary submission was submitted to the Committee on 10 April 1986<sup>4</sup>. The Committee took evidence from the Auditor-General and officers of the Department of Local Government and Administrative Services (DOLGAS), the Department of Finance and the Public Service Board at a public hearing on 17 April 1986<sup>5</sup>. DOLGAS provided a written statement on certain matters the Committee had raised in advance of the hearing<sup>6</sup>.

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1. Appendix 2.
  2. Appendix 1.
  3. Appendix 3.
  4. Appendix 6.
  5. PAC Minutes of Evidence, Public Hearing on Proposed Computer Acquisition by the Australian Audit Office, 17 April 1986.
  6. Appendix 5.

Subsequent to the public hearing AAO provided a written response on 24 April<sup>7</sup> to several questions put by the Committee at the hearing. The Department of Finance has not as yet replied to some questions taken on notice at the public hearing.

#### The Australian Audit Office

1.5 The role of the Auditor-General, and by extension his Office, is to improve the economy, efficiency and accountability of the Commonwealth Public Sector by comprehensive auditing of Commonwealth departments and agencies and by reporting on these audits to the Parliament.

1.6 The AAO undertakes two principal types of audits:

- audits of financial regularity and compliance (used to produce the report required on the annual financial statements of the Minister for Finance, and the Auditor-General's annual financial statements on statutory authorities and government owned or controlled companies); and
- performance audits which include efficiency audits and project audits.

1.7 The 1984-85 Annual Report of the Australian Audit Office indicated that of the total audit effort in 1984-85, 11 percent was devoted to audits of the financial statements prepared by the Minister for Finance, 56 percent to audits of the financial statements of authorities and companies, 5 percent to efficiency audits and 28 percent to other project audits including audits of computer systems<sup>8</sup>.

1.8 The AAO comprises a central office and seven field branches. Central Office is located in Canberra and consists of four divisions. Three of these have operational responsibilities covering specific departments and agencies and one has administrative and technical support responsibilities. There is a field branch in the ACT and in each State. The three largest field branches are the ACT, NSW and Victoria.

1.9 Central Office essentially has a planning and co-ordination role although some special project audits and research are also undertaken. The field branches conduct, with assistance from Central Office, audits assigned to them which are of relevance to their geographical areas. All reports are finalised in Central Office.

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7. Appendix 7.

8. Annual Report of the Australian Audit Office, 1984-85, AGPS, Canberra, p. 23.

1.10 As at 30 June 1985, AAO had a total of 448 audit professionals of which 80 were located at Central Office. The largest state offices are ACT, NSW and Victoria which had 128, 70 and 92 staff respectively. The majority of administrative staff are located at Central Office (84 of a total of 127).

#### Overview of the Proposal

1.11 AAO submits that it requires a computer network to meet the needs generated by the increasing volume and scope of audit work and the growth in the number and complexity of computer systems used by its auditees (ie other Commonwealth departments and authorities). The system is designed to improve the general management of the AAO's activities and, in particular the selection and conduct of audits. The main emphasis of the proposed systems is directed therefore towards better management information and information to assist audit planning, control and operations.

1.12 The Auditor-General noted in his 1984-85 Annual Report that:

.. the AAO has been able to undertake only minimal auditing of the computer aspects of many major automated processing systems in a range of large departments and statutory authorities and finds it impossible to perform the regular review of these systems necessary to ensure that changes to systems have not affected their reliability. The Office too often has to rely on the minimal assurance gained from extensive review of manual procedures and limited use of computer assisted techniques. The AAO continues to accumulate major backlogs in audit examination of automated accounting packages nowadays being introduced by many auditees and is even further behind in the examination of auditee's systems for delivery of services and provision of management information.<sup>9</sup>

1.13 AAO envisages that the specific tools required to meet these needs will be best provided by a system involving three levels of data processing:

- a central computing facility and associated software. The AAO suggests that the central computer be an IBM compatible computer, equivalent to an IBM 4381;
- a network to provide processing capacity, office automation and printing facilities for each State and to provide access to the central applications. It is proposed that the network will comprise local area networks which can operate independently of the central computer; and

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9. *ibid.*, p. 4.

• a micro computer facility to provide tools such as spreadsheets and word processing for audit staff.

1.14 The AAO at present has only modest computer resources of its own and in consequence has not been able to undertake satisfactory audits of major computer systems under its purview. AAO has approximately 50 IBM personal computers which are used in the planning and conduct of audits.

1.15 The AAO is in the process of developing various Computer Assisted Audit Techniques (CAATs) to enable the field auditor to carry out specific tests on computer files of interest. However AAO does not have its own computing facilities capable of running standard CAATs. It currently uses CSIRONET to provide central computing facilities to AAO on a commercial bureau basis. Audit field staff can use terminals in the field to access CAATs on the CSIRONET facility but AAO asserts this arrangement does not provide the user with the priority or security of information their work requires. At present AAO is paying \$200,000 p.a. for CSIRONET's services. It is estimated that as more CAATs are developed and made available the annual cost will rise to \$800,000.

1.16 AAO proposes a phased acquisition and system development program commencing with the purchase of a central computing facility and a pilot network. It intends that applications currently running on CSIRONET will be transferred to the new facility where further application development work will be undertaken. Once the initial acquisition has been made (expected towards the end of 1987) additional workstations will be progressively acquired over the following three years.

1.17 AAO also states that this strategy is consistent with the Government's desire to exercise budgetary restraint and to limit acquisitions to those which are clearly inescapable and incapable of deferral. AAO also maintains that its strategy of progressively phasing in the network should minimise the risks involved with a major increase in the use of computing technology.

1.18 AAO's original submission estimated the total cost of the acquisition proposal over the period 1986-87 to 1989-90 to be approximately \$23 million including \$6 million of capital equipment. AAO submitted that it would absorb most user staff costs and a substantial component of computer service staff costs from existing resources. As a consequence it estimated that the additional expenditure over this period will be reduced to approximately \$13 million.

1.19 The AAO submits that the benefits of the proposed acquisition are substantial but are extremely difficult to quantify in monetary terms. The expected benefits are in the nature of improved management information and decisions, better priority determination for audits and, most importantly, an

improvement in the quality of audits. The AAO in its 1985 ADP Strategic Plan, which covers the period June 1984 to June 1990, does attempt some quantification of benefits where it states, that when fully implemented the systems will increase the productive capacity of the AAO by the equivalent of the addition of some 61 professional staff. The overall cost of employing such staff would approximate \$3.3 million per year.<sup>10</sup>

1.20 The AAO claims that the benefits to the public sector generally in terms of the greater administrative efficiency which would result from AAO's increased productive capacity are real but immeasurable.

1.21 AAO proposes to acquire an IBM or IBM compatible mainframe computer in order to best support the software environment needed for the development and operation of the proposed application systems. AAO argues that an IBM compatible environment is required because a significant proportion of auditees use IBM compatible equipment. The Request for Tender (RFT) should specify an IBM compatible mainframe as a mandatory requirement for tenders.

1.22 AAO acknowledges that its selection of software is crucial to its overall information system proposal. AAO has not completed the preparation of its RFT. However it has been made clear at industry briefings provided by AAO that considerable emphasis is being placed on software compatibility across the network machines and the mainframe. Such a feature would be highly desirable from a system design and user's point of view. With procedures common at each level in the system, users will find it easier to gain access to, and use the system's facilities.

1.23 A consultant, Mr David Angeloro, has been engaged to assist AAO in the preparation of a structure for its RFT and to propose a suitable evaluation methodology. The consultant has also reviewed AAO's 1985 ADP Strategic Plan.

10. Australian Audit Office ADP Strategic Plan, September 1985, p. 43.

## CHAPTER 2

### MAJOR ISSUES

- . Costs
- . Benefits
- . Post Implementation Review
- . IBM Compatibility
- . Software Compatibility
- . Evaluation Methodology
- . The Auditor-General

#### Costs

2.1 AAO's submission of 26 February 1986 indicated that the total cost of the project over the period 1985-86 to 1989-90 would be approximately \$23 million, of which some \$10 million would be absorbed from current resource levels. It estimated therefore that after absorption, the total additional expenditure on the project would be \$12.8 million. This additional expenditure comprised capital costs of \$5.9 million, staffing costs of \$4.4 million, development and ongoing costs of \$1.9 million and accommodation costs of \$0.6 million.

2.2 In its review of this proposal the Committee was concerned to establish the basis for the substantial cost absorption proposed by AAO. The Committee's experience with other ADP projects has too frequently been that the magnitude of the cost savings initially claimed for computer systems has been substantially reduced during the implementation of these systems because of 'unanticipated' development and user support costs. The Committee was thus concerned to establish clearly what assumptions underlay the estimates that a substantial part of the total costs of this project could be absorbed from existing resources. The estimated total absorbed costs of \$10.0 million over the period 1985-86 to 1989-90 comprised:

- . ADP staff \$3.0 million;
- . user staff \$4.9 million;
- . computer time for CAATs \$1.1 million; and
- . existing ADP expenditure approximately \$1.0 million.

2.3 The AAO's supplementary submission of 10 April<sup>11</sup> did not respond adequately to the Committee's questions on project costing. The submission explained that the original costings had attempted to identify the total costs of the project over the period and then to specify which components would be absorbed using existing resources. A revised costing schedule was provided which gave a revised estimate of total additional expenditure on the project of \$15.3 million. However it did not clarify the origin or nature of the absorbed costs.

11. Appendix 6.

2.4 The Committee raised the absorbed cost matter again at the public hearing on 17 April and also asked for a reconciliation of the two previous estimates of total costs. A brief explanation of the differences between the two estimates was provided by AAO in a letter of 24 April<sup>12</sup> following the hearing and these were further elaborated in correspondence of 14 May 1986<sup>13</sup>.

2.5 AAO explained that \$2.5 million additional costs had been identified as a result of the Committee's questions and a review of the initial cost estimates by a consultant, Mr David Angeloro. In consequence the estimate of total additional expenditure on the project increased from \$12.8 million to \$15.3 million. This increase was due to additional hardware and software requirements which were identified. In addition, an additional 3 staff were also included to form a user support group. The Committee also notes that AAO admits that there was a conceptual error in its original estimates of absorbed costs for non-staff items which arose from subtracting the item 'Computer Time' for CAATs from total costs.<sup>14</sup>

2.6 The Committee remains in some doubt, given the substantial underestimation of necessary staff development resources in other ADP projects which the Committee has examined, whether the level of staff support which AAO proposes to absorb from existing resources is achievable. For example, in the staffing area it is proposed that approximately \$3 million of a total of \$7 million of ADP staff costs and all of the \$5 million of user staff costs will be absorbed<sup>15</sup>. These absorbed staff costs, which include an 85 percent overhead component, represent approximately 5 percent of the Australian Audit Office's annual salaries vote. In the ADP area they will represent over 40 percent of its total projected annual ADP staff costs.

2.7 The Committee concludes that:

- . the Australian Audit Office has made a serious attempt to identify the total cost of this project in accordance with the guidelines issued by the Public Service Board;
- . much of the confusion surrounding the Australian Audit Office's successive attempts to present and justify the cost estimates for this project could have been avoided if the costing tables were accompanied by clear and comprehensive explanatory notes describing the nature of each item and of the absorbed costs;
- . the cost estimates accompanying the Office's original submission to this Committee have been and may well continue to be the subject of some further refinement;

12. Appendix 7.  
13. Appendix 8.  
14. Appendix 7, p.247.  
15. Appendix 2, Attachment A, p 75-76.

- there is some doubt whether the level of additional staff support which is to be provided for this project is sufficient to secure its successful implementation; and
- the level of absorption of the staff resources proposed for this project must be considered a measure of the Auditor-General's and his organisation's commitment to cost containment in the successful implementation of this project.

#### Benefits

2.8 The AAO submission of 26 February describes the changing environment in which the Australian Audit Office has been working<sup>16</sup>. The AAO's workload has grown as departments and authorities have grown and new organisations have been created. In addition, the scope of AAO's responsibilities has increased to include not only auditing for financial regularity, but also investigating the administrative efficiency and cost effectiveness of government programs and activities. There has also been substantial growth in the automatic data processing activity of organisations generally.

2.9 The acquisition of information processing capabilities by the AAO is a response to these pressures. It will enable AAO to increase the quantity and quality of its audits and to increase the overall effectiveness of the office in identifying administrative inefficiencies and waste. It will also provide a tool which is necessary for the auditing of other departments' and agencies' ADP systems.

2.10 AAO also submits that the proposed ADP systems will give it the independence necessary to determine its own processing priorities and to guarantee appropriate security for the information used during audits. At present AAO relies on a computer bureau, CSIRONET and access to auditees' computer facilities for its ADP needs.

2.11 In summary AAO asserts that the benefits of its proposed ADP acquisition are:

- more audits could be undertaken;
- audits could be better chosen with improved planning, assessment of risk and priority determination;
- better quality audits could be carried out with improved information and support systems; and
- more comprehensive and complex audits of information processing systems could be undertaken.

16. Appendix 2, p. 35.

2.12 However AAO asserts in its submission of 26 February that the main benefits which will result from the proposal cannot be quantified with confidence<sup>17</sup>.

2.13 The Committee appreciates and supports the basic motivation of AAO's proposed computer acquisition. If the AAO is to be able to conduct rigorous analyses of the performance of other departments and agencies, then it must have modern management and auditing tools at its disposal. The Committee is concerned that the Australian Audit Office currently appears to be poorly equipped, at least in terms of the information technology and related expertise at its disposal, to undertake audits in some of the large and technologically sophisticated departments and agencies of the Commonwealth.

2.14 The Committee is conscious of the special role of the Auditor-General in identifying administrative inefficiency and waste and ensuring accountable practices in Commonwealth departments and agencies. It is partly because of this special role that the Committee is anxious to see evidence of a thorough assessment and where practicable, quantification of the benefits which will result from this ADP acquisition.

2.15 The Committee notes that senior officers of AAO undertook a major review of information systems and audit support needs in 1985. This study concluded that improved audit selection resulting from a better information base on auditees, better information on audits in progress and improved audit quality, would result in substantial gains in productivity in AAO. The conclusion subsequently reported in the Australian Audit Office's 1985 ADP Strategic Plan was that:

In summary, the proposed systems are expected to lead to substantial gains of an order that could only be achieved by a 20% increase in planning staff, a 15% increase in field audit staff and a 20% increase in the number of DP specialist staff. If increases in productivity of this order were to be realised they would equate to an overall increase of 61 AOSU. A fair estimate of the cost of such a staff increase if currently approved would approximate \$3.3 million per year. On this basis the payback period for the additional expenditure on computer systems is less than 4 years.<sup>18</sup>

2.16 However AAO has since stated in its submissions to the Committee that this conclusion has limited significance and was not used as the basis for the AAO Cabinet proposal.

17. Appendix 2, p. 38-41.

18. Australian Audit Office ADP Strategic Plan, September 1985, p. 43.

2.17 The Committee recognises that quantification in monetary terms of some of the indirect benefits resulting from the proposal is not possible to achieve with precision. For example, improvements in the effectiveness of the audit function will result in monetary benefits to the public sector generally through greater administrative efficiency and the reduction of waste. These indirect benefits, though real, may be impracticable to quantify with any significant degree of confidence.

2.18 However the Committee does believe that many direct benefits from the proposed ADP system can and should be quantified. For example while the AAO may not have sufficient confidence in quantified benefits such as the productivity gains equivalent to 61 AOSL, it must be able to state a lesser amount with increased confidence. If the AAO is convinced that more audits can be undertaken, then it should be possible to state how many audits of particular size and complexity are currently performed and how many additional audits are possible, even if the estimate is necessarily conservative. Similarly, if audits are to improve in quality it should be possible to indicate the ways in which they will be better and to subsequently monitor and verify that the benefits are indeed realised.

2.19 If the benefits asserted for ADP proposals are to be realised, it is essential that realistic performance targets be established, that staff work towards these targets, and that management monitor progress against these targets.

2.20 The Committee also notes that while the AAO has resisted quantification of the project's benefits, which it asserts would be difficult to substantiate, it has assured the Committee that it can and will monitor the level of benefits during the project's implementation.

2.21 The Committee believes that although precise quantification of all benefits is sometimes not practicable in projects of this type, the process of attempting to define benefits and to quantify those benefits is invaluable. At the very least it can provide the basis for defining a set of performance indicators and the information required for their calculation, which will permit management to monitor the project's performance and benefits. The development of such a set of performance indicators should be an integral component of the project development task.

2.22 The Committee concludes that:

- the proposed ADP acquisition by the Australian Audit Office is justified in terms of the improved effectiveness of the Australian Audit Office in promoting administrative efficiency and accountability in the Commonwealth public sector;

- the Australian Audit Office has not made an adequate effort to define and quantify the benefits resulting from the proposed ADP acquisition and the information systems it will support; and

- the process of attempting a comprehensive definition and quantification of benefits will provide a basis for the establishment of output indicators and performance measures for the proposed systems. These should be integral components of the proposed ADP system itself.

2.23 The Department of Finance and the Public Service Board supported the AAO proposal in their co-ordination comments when it was submitted for 'in principle' Cabinet approval. The Department of Finance concluded that there was a demonstrated and urgent need for audit to acquire an adequate computer-based systems capability. The Public Service Board supported the proposal on grounds of cost effectiveness. However at the public hearing the Board indicated that it was in fact:

...rather imprudent to nominate these grounds as the basis for our support, because it might be taken to imply that we had carried out a comprehensive cost effectiveness analysis...<sup>19</sup>

2.24 Neither co-ordinating agency was able to provide convincing evidence of taking action to challenge and substantiate the benefits asserted. The Department of Finance representative stated that the Department accepted the Auditor-General's arguments that at the present time systems implemented in departments have generally outstripped its own ability to keep pace with effective audit of systems and that the Department had had:

...substantial discussions with the Auditor-General's people about the costs and benefits he had identified and generally satisfied ourselves that he had done that fairly rigorously...<sup>20</sup>

2.25 The Committee concludes that:

- it is doubtful whether co-ordinating departments and agencies, including the Department of Finance and the Public Service Board, have seriously challenged or attempted to verify the benefits asserted for the Australian Audit Office's proposed ADP acquisition.

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19. PAC Minutes of Evidence, p. 344.  
20. PAC Minutes of Evidence, p. 340.

2.26 The Committee notes that the AAO proposal has as yet only requested and received 'in principle' Cabinet approval. However the Committee is doubtful, given the pressures of the budget cycle, that the benefits asserted for this or other like proposals would in the normal course of events be seriously reviewed when subsequently submitted for funding approval.

2.27 The Committee recommends that:

- 1 the benefits asserted for ADP acquisition proposals be subject to rigorous scrutiny and verification by the Department of Finance when funding approval is requested.

#### Post Implementation Review

2.28 The Committee has noted the difficulties experienced by AAO and the co-ordinating agencies concerned in assessing the benefits expected to result from AAO's proposal. Therefore, the Committee wishes to establish that effective performance monitoring systems will be put in place and a review of the project performance will be undertaken after implementation.

2.29 At the Committee's public hearing on 17 April 1986 the Department of Local Government and Administrative Services (DOLGAS) informed the Committee that it did not have a role in post implementation review except in relation to contractual matters. The Department of Finance representative explained that his department does not have a role in post implementation review. Moreover, its efforts were mainly concentrated on the assessment of cost and benefits at the pre-implementation stage of projects. The Department of Finance stated that its function at the approval stage is to satisfy itself that the proposal is properly justified and all its implications have been considered. The Department of Finance indicated it would only examine the performance of a project after implementation when and if requests were made for further expenditure. The Public Service Board stated that it did not perceive it had a role in the examination or conduct of post implementation reviews.

2.30 The Committee would expect that one of the matters which the Department of Finance should consider when assuring itself that ADP acquisition proposals had been properly planned and justified is that the proposal includes effective monitoring systems and output indicators which will provide a basis for the assessment of project performance and benefits.

2.31 The Committee notes that the Financial Management Improvement Program being oversighted by the Department of Finance and the Public Service Board places greater emphasis on the definition and monitoring of program and project outputs. At the public hearing the Committee requested written advice from the Department of Finance on its future role in monitoring the performance of ADP projects and its involvement in post implementation reviews. It has yet to receive this advice.

2.32 The Committee concludes that:

- the conduct of post implementation reviews of major ADP based projects and of the individual system applications which they incorporate, is a fundamental element of proper planning and project management practices;
- it is clearly the responsibility of heads of departments and agencies to ensure that such implementation reviews are undertaken; and
- no co-ordinating agency currently accepts that it has a responsibility, as a matter of course, to review the performance and benefits of ADP projects after their implementation.

2.33 The Committee recommends that:

- 2 all ADP acquisition proposals include detailed provisions for the collection of the performance data necessary for undertaking post implementation reviews and monitoring productivity improvements and other project benefits;
- 3 at the time funding approval is requested for ADP acquisitions, the Department of Finance ensure that adequate attention has been given in the proposal to the subsequent monitoring of project performance and benefits; and
- 4 the Department of Finance insist that any subsequent requests for additional project funds, upgrades to existing installations and re-equipment acquisition are supported by the results of a post implementation review and a comprehensive statement of the benefits achieved to that time.

#### IBM Compatibility

2.34 AAO proposes to acquire a mainframe computer facility to support central information systems which will require sophisticated development software and/or which will need to be accessed from all areas of the Audit Office. It argues that this central processing facility should be IBM compatible.

2.35 AAO therefore proposes that the total system acquisition be made by a public tender, but with the restriction that the mainframe facility be IBM compatible. The other components of the tender which include work stations, personal computers, word processors and a range of supporting software, would not be restricted in this way.

2.36 AAO's basic case for an IBM compatible mainframe is that it is necessary for AAO's strategic direction and overall requirements<sup>21</sup>. AAC estimates that 46 percent of auditees have IBM compatible equipment. This figure is even higher (71 percent) for its major auditees where AAC performs most of its auditing work<sup>22</sup>. AAC submits that with an IBM compatible mainframe it would:

- have proportionately fewer problems in transferring data from auditee sites to the central site;
- have fewer problems in transferring data from non-IBM compatible sites to its IBM compatible mainframe since most equipment these days has to be able to do this;
- be able to select auditee file analysis software and other technical audit software to run on its own central site as well as on a range of IBM compatible computer installations operated by its auditees; and
- be able to give its staff experience in an IBM compatible environment which, given the dominance of IBM compatible systems among its major auditees, would be most valuable in AAO's overall development of its ADP audit capability.

2.37 In addition AAO's consultant, Mr Angeloro, argued that the recruitment and retention of suitably qualified ADP auditors would be easier if AAO's systems operated in an IBM compatible environment<sup>23</sup>.

2.38 The Committee has some sympathy with these arguments. However these advantages must be balanced against the advantages of an open tender in securing the most cost effective solution to AAO's requirements. The responsibility for weighing these factors is ultimately vested with the Purchasing and Disposals Division of the Department of Local Government and Administrative Services. However there are several points which the Committee wishes to make about the advantages which AAO cites in support of its case for IBM compatibility.

2.39 Although 46 per cent of auditees may have IBM compatible equipment there are still many incompatibilities within this group. For example, there are various operating systems used (DOS/VSE, MVS, MVS/XA); data base management systems (INS, IDMS, M204, ADABAS); or security software (RACF, ACF2, TOP SECRET). This diversity militates against a completely harmonious relationship between AAO and its IBM compatible clients even if

21. Appendix 6, p. 108.

22. Appendix 6, p. 166.

23. PAC Minutes of Evidence, 17 April 1986, p. 358

AAO were to have an IBM compatible mainframe. Furthermore AAC still has to come to terms with the remaining 54 percent which do not have this compatible equipment.

2.40 The Committee does not consider AAO's argument regarding the ease of transferring data from auditee sites to its central site to be convincing. There are facilities available to transport data between IBM compatible equipment and most other major computer manufacturers' equipment. The Committee understands that once the software interfaces are established this exchange would be no more difficult for other machines than for IBM compatible machines.

2.41 AAO's arguments concerning the compatibility of audit software used by auditees and that used by AAO itself does carry some weight. This, however, does not in itself present an overpowering case for IBM compatibility. On this basis there does not appear to be any convincing 'technical' reasons for AAO to secure an IBM compatible mainframe. Evidence from the DOLGAS witness at the public hearing supports this view. DOLGAS submitted that:

...on purely technical grounds there is no justification in this case for IBM compatibility. The sorts of features, facilities and functions of software which can be provided by other vendors are similar to those which can be provided in an IBM environment, in our view...<sup>24</sup>

2.42 DOLGAS further submitted that IBM compatibility for the AAO mainframe should be made a desirable rather than a mandatory requirement of the Request for Tender.

2.43 AAO responded that if IBM compatibility was only a desirable requirement, the complexity of both the RFT and tender evaluation would increase significantly. In a letter to the Committee of 24 April, AAO also submitted that such a course, while ostensibly providing for an open tender:

...could leave the AAO open to the criticism of being less than frank in its specification, it might be said to be biased toward an IBM compatible solution. The PAC believes that it should clearly express its strategic requirement for an IBM compatible mainframe and to develop evaluation criteria appropriate to that requirement...<sup>25</sup>

2.44 AAO argues that it is the strategic advantage of AAO in terms of the Office's longer term performance which is decisive in the case for an IBM compatible mainframe. AAO suggests that it would be of considerable assistance to its ADP and other audit staff to have an IBM compatible mainframe because that

24. PAC Minutes of Evidence, 17 April 1986, p. 361.

25. Appendix 7, Section 5, p. 251.



environment is the one in which they most frequently operate when auditing major clients. The acquisition of an IBM compatible mainframe is therefore declared to be a strategic requirement of AAO.

2.45 AAO acknowledges that the staff who would be directly exposed to the mainframe environment would be small but suggests that there would be benefits to all audit staff from association with an IBM compatible environment. By this it is meant that over time ADP auditors and field staff more generally, would become familiar with aspects of the IBM compatible equipment and operating environment which could be applied more generally in their auditing functions. In addition it is envisaged that from time to time AAO's own ADP support technicians could give specialist advice to auditors who may be faced with a particular problem with one of their clients with IBM compatible equipment.

2.46 The Committee also notes Mr Angeloro's anecdotal evidence at the public hearing concerning the possible effect of the choice of mainframe on staffing in AAO. Mr Angeloro submitted that the acquisition of an IBM compatible mainframe would be of substantial assistance to AAO in attracting suitably qualified ADP professionals and auditors to the organisation<sup>26</sup>. Neither Mr Angeloro nor AAO were able to provide evidence supporting this claim. However, the Committee notes that the high turnover of qualified audit and ADP staff was identified by the Auditor-General as a current problem for AAO which could be reduced by the introduction of improved information systems based on modern computing technology.

2.47 The Committee also understands that making IBM compatibility a mandatory requirement for the mainframe would reduce the complexity of the RFT and tender evaluation process, and hence the time and costs in establishing a contract.

2.48 The Committee recognises that the ultimate judgement as to whether these arguments for an IBM compatible mainframe carry sufficient weight to justify their specification as a mandatory requirement of the tender must be made by the Department of Local Government and Administrative Services after consultation with AAO.

2.49 The Committee concludes that:

- the technical benefits to the Australian Audit Office in specifying that its mainframe must be IBM compatible are not persuasive;
- there are non-technical advantages in acquiring an IBM compatible mainframe facility which would be of strategic benefit to the development of the Office's ADP capability. The main benefit appears to be the experience that its staff will acquire in the IBM compatible environment common to approximately two thirds of its major auditees; and

- that the benefits which the Australian Audit Office asserts would result from the selection of an IBM compatible mainframe, should be able to be represented and given appropriate weightings in an open tender specification.

The Committee recommends that:

- 5 the 'Guidelines for ADP Acquisition' and the methodologies nominated therein be reviewed with a view to ensuring that as far as possible the non-technical advantages associated with particular tender proposals are recognised and can be given appropriate weightings.

#### Software Compatibility

2.50 AAO has been developing its RFT concurrent with this inquiry. The RFT has not yet been completed. However, based on the information provided to the Committee, it appears that AAO will require user software running on network computers and the central mainframe to be compatible. This would allow users easier access to the system's facilities because procedures would be common at each level of the system. Common procedures across the network and the mainframe would also reduce support and training costs. However, achieving software compatibility can be technically quite demanding.

2.51 The Committee was therefore concerned to establish that AAO has taken adequate steps to establish that software compatibility is achievable across the proposed network and that the proposed integration strategy is feasible using technology which is currently available.

2.52 In its supplementary submission of 10 April 1986 AAO indicated that on the basis of extensive discussions with a large number of vendors and using the product offerings of two vendors, it had demonstrated to its own satisfaction that the integration strategy and software compatibility proposed were achievable<sup>27</sup>.

2.53 At the public hearing the AAO's consultant, Mr Angeloro, supported AAO's confidence in the viability of the integration strategy.

2.54 The Committee concludes that:

- the Australian Audit Office has taken reasonable steps to establish that the integration strategy and software compatibility it proposes for its ADP network are achievable using existing technology.

27. Appendix 6, p. 114.

26. PAC Minutes of Evidence, 17 April 1986, p. 358.

## Evaluation Methodology

2.55 AAO's consultant, Mr David Angeloro undertook the formulation of an RFT framework and a suitable evaluation methodology. The evaluation methodology which the consultant initially proposed differed from the standard methodologies endorsed by DOLGAS and contained in the 'Guidelines for ADP Acquisition'.

2.56 DOLGAS, as the Commonwealth's purchasing authority, has the responsibility to ensure that procedures, including those for tender evaluation set down in the Guidelines are followed. DOLGAS's submission of 9 April 1986 to the Committee states that:

...we are concerned that a number of principles underlying the Commonwealth's methodology in such areas as treatment of mandatory requirements, scoring of desirable attributes and the avoidance of subjectivity wherever possible, are being ignored...28

2.57 The Committee raised this matter at the public hearing. Mr Angeloro admitted that the evaluation methodology which he had initially proposed did not conform with those recommended in the Guidelines. Mr Angeloro stated that he had recommended this evaluation methodology and structure for the RFT because of problems he perceived with those listed in the Guidelines in relation to AAO's proposed acquisition. He emphasised, however, that his draft paper had been circulated for comment and that there was no intention to usurp the role of DOLGAS or circumvent the Guidelines. The AAO informed the Committee at the hearing that it was evaluating Mr Angeloro's paper and had not as yet endorsed his proposal.

2.58 Subsequent advice from AAO to the Committee of 24 April 1986 summarised the major advantage of Mr Angeloro's proposed evaluation methodology. AAO stated that it would allow the many varied elements in the proposal to be weighted differently and thus allow the evaluation methodology to be more specifically tailored to take account of the differing characteristics of the various elements of AAO's proposed ADP network<sup>29</sup>.

2.59 AAO expressed its concern that the DOLGAS endorsed evaluation methodologies could give excessive weight to minimising cost and lead to a tender solution which would adversely effect the strategic development of AAO's requirements.

28. Appendix 5, p. 103.

29. Appendix 7, Section 4, p. 248.

2.60 AAO also indicated its concern that, as a novice user, it wished to ensure that the successful vendor provided adequate support so as to minimise the risk of technical failures. The proposed evaluation methodology it asserts, will cater for this requirement in the cost model and in the weightings assigned for identified potential risks related to particular solutions.

2.61 Both AAO and DOLGAS have advised that further discussion and review of the proposed methodology has resulted in both agencies being confident that a methodology conforming to the Guidelines and meeting AAO's requirements will be agreed.

2.62 The Committee concludes that:

- the evaluation methodologies and Request for Tender contained in the 'Guidelines for ADP Acquisition' undoubtedly have some deficiencies and are capable of being improved and refined; and
- the current Guidelines have been endorsed by government and until such time as they are amended they should be followed.

2.63 The Committee recommends that:

- 6 The Department of Local Government and Administrative Services expedite its current review of the 'Guidelines for ADP Acquisition' with a commitment to issue a revised set of Guidelines by the end of 1986; and
- 7 all departments and other organisations with an interest submit their comments and recommendations on the contents and operation of the Guidelines to the Department of Local Government and Administrative Services and to this Committee.

2.64 The Committee will be referring comments it has already received on the Guidelines to DOLGAS and will be taking a close interest in the progress of that review and its outcome.

## The Auditor-General

2.65 The Committee considers that the standing of the 'Guidelines for ADP Acquisition' is a crucial matter in determining that the acquisition of ADP facilities proceeds in a fair and responsible manner and with a cost effective outcome for the Commonwealth.

2.66 At the Committee's public hearing on 17 April 1986, the representative of the Department of Local Government and Administrative Services confirmed that the 'Guidelines for ADP Acquisitions' have had ministerial endorsement and were the result of a Cabinet decision which has never been revoked. In

consequence DOLGAS's view is that the Guidelines should be followed by those government departments and authorities staffed under the Public Service Act, including the Australia Audit Office<sup>30</sup>.

2.67 When asked by the Committee whether the Audit Office is bound to comply with the Guidelines in a similar manner to other government departments, the Auditor-General stated:

I think it would be putting me in an extremely difficult situation if I were asked by this Committee to accept that the Auditor-General has to be bound by government policy as it relates to the Australian Public Service in every situation because, by convention, there is a relationship between the Auditor-General and the Prime Minister where I have direct access to consider any general issue which causes me concern.<sup>31</sup>

2.68 The Auditor-General further stated:

What I can say is that my policy has been, in all matters where the power of the Executive government is involved in relation to the Audit Office, to seek to apply to the Audit Office the guidelines and procedures which apply to departments of states generally, but I do have to make the reservation I made earlier.<sup>32</sup>

2.69 The Auditor-General's earlier reservation appears to have concerned a hypothetical situation where a purported requirement that he comply with a matter of government policy prevented the Audit Office from taking action which the Auditor-General considered necessary for the effective pursuit of his Charter<sup>33</sup>.

2.70 The Committee does not suggest that the Audit Office has, in this ADP acquisition proposal or any other, sought to circumvent the 'Guidelines for ADP Acquisition' by virtue of the special standing of the Auditor-General's office. However the Committee remains in some doubt, notwithstanding the Auditor-General's statements on this matter at the public hearing, as to whether or not he considers the Audit Office should be 'bound' by these guidelines in the same manner as are other government departments and agencies.

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30. PAC Minutes of Evidence, p. 368.

31. PAC Minutes of Evidence, p. 369-370

32. PAC Minutes of Evidence, p. 371.

33. PAC Minutes of Evidence, p. 369.

2.71 This question undoubtedly does impinge upon much more fundamental questions about the Auditor-General's powers and the nature of his relationship to the Executive arm of government. The Committee notes that the Auditor-General has raised some of these issues in his Annual Report to Parliament<sup>34</sup>. The Committee intends to seek further clarification from the Auditor-General on these matters in its examination of his annual report.

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34. Annual Report of the Australian Audit Office, 1984-85, Chapter 1.

APPENDIX 1

Involvement of the Public Accounts Committee  
in the Acquisition of ADP Facilities  
- Guidelines for Submission, May 1985



COMMONWEALTH OF AUSTRALIA  
JOINT PARLIAMENTARY COMMITTEE OF PUBLIC ACCOUNTS

PARLIAMENT HOUSE  
CANBERRA ACT  
TEL 72 7455

Dear

INVOLVEMENT OF THE JOINT COMMITTEE OF PUBLIC ACCOUNTS IN THE  
ACQUISITION OF ADP FACILITIES

1. The Joint Committee of Public Accounts has been given a standing reference by Parliament to investigate and report on proposed major acquisitions of ADP facilities by the Commonwealth.
2. This instruction sets out the information requirements of, and procedures to be followed by, the Public Accounts Committee in discharging its duty to investigate and report on proposed acquisitions of ADP facilities by the Commonwealth.
3. The following motion was moved by the Leader of the House in the House of Representatives on 8 May 1985:
  - (1) That, in accordance with paragraph 8 (1) (d) of the Public Accounts Committee Act 1951, this House refers to the Joint Committee of Public Accounts for investigation and report as necessary from time to time, the proposed acquisition of automatic data processing facilities by any Commonwealth department or authority of the Commonwealth staffed under the Public Service Act 1922; notification of intention of which is to be conveyed to the committee by the Minister responsible for the department or authority intending to acquire the facilities.
  - (2) That this resolution will continue in force unless and until amended or rescinded by the Senate or the House of Representatives in this or a subsequent Parliament.
  - (3) That a message be sent to the Senate acquainting it of the resolution and requesting its concurrence.

This motion was subsequently passed by both Houses of Parliament. A copy of the relevant extracts from Hansard is attached.

4. The motion reflects the Government's concern that major ADP acquisition proposals are often of such complexity and raise such important related issues that they cannot be dealt with adequately under the severe pressures imposed by the Budget timetable. It is intended that the Committee's scrutiny of ADP acquisition proposals will occur outside the annual budget process and will precede any Cabinet approval for the commencement of the tendering and acquisition process.

5. Responsible Ministers are therefore invited to submit major ADP acquisition proposals to Cabinet for 'in principle' approval at the earliest opportunity and well in advance of any submission seeking commitment of funds.

6. ADP acquisition proposals (as defined in Finance Circular 1984/7) will normally be referred to the Committee for examination and report where the purchase cost over three years of hardware, related software and specific site preparation; and/or the cost of leasing or renting the same over four years exceeds \$5 million. Referrals to the Committee will be at the discretion of Cabinet.

7. The Committee will look to the proponent department/authority and other agencies currently involved in the ADP planning and acquisition process to demonstrate inter alia that the proposal makes good economic sense and will stand up to public scrutiny, that it is in accord with corporate and ADP strategic objectives and represents the most effective means of achieving these, that industrial relations and employment issues have been fully considered and that the proposal provides maximum benefit for Australia's industrial development.

8. Proponent departments/authorities should provide the Committee with three categories of documents; viz an Executive Summary, Proposal Overview Document and Supporting Documentation.

9. EXECUTIVE SUMMARY - a succinct statement of approximately 5 pages length which summarises in non-technical language the crucial information presented in the Proposal Overview Document.

10. PROPOSAL OVERVIEW DOCUMENT - this should provide description, explanation and argument of a more detailed nature. The document should specifically address issues under the following headings, and may include additional information as deemed necessary by the department/authority or as requested by the Committee. It is not the Committee's intention that information already contained in other documentation should be unnecessarily duplicated here. However, where the information requested under these headings is contained in supporting documentation and reports (eg the Strategic Plan), this should be clearly identified and cross-referenced.

- (i) Nature of, and justification for the proposal - a description of the proposed acquisition, and a clear statement of the justification for the proposal in terms of its benefits and costs, including the specific needs which the proposal is intended to satisfy.
- (ii) ADP objectives - an overview of approved ADP objectives together with their relationship to authorised departmental/authority objectives and work programmes.
- (iii) Corporate Plan (Summary) - a statement of the corporate objectives and plans of the organisation with emphasis on management information systems which are planned or in operation.
- (iv) ADP Strategic Plan (Summary) - a description of the present ADP facilities and the major systems operating on them. It should cover future plans, a risk analysis, contingency planning and the involvement of internal audit in the planning process. Comments from the Public Service Board on the ADP Strategic Plan should be included. Any significant differences between the ADP Strategic Plan and the acquisition now proposed should be highlighted.
- (v) Post Implementation Review - the outcome of the review carried out on the present ADP systems. Relevant comments made by the Auditor-General and/or internal audit should also be included.
- (vi) System proposals - details of the proposed systems that will run on the computing environment being acquired and how these relate to existing systems. This information should include a conceptual description of each system proposed.
- (vii) Other options considered - a description of the alternative development strategies and acquisition options considered together with an explanation as to why other options have been eliminated.
- (viii) Cost effectiveness - a cost analysis of each option with a detailed benefit/cost analysis of the most promising of these. (It is accepted that in some instances it may prove difficult to attribute definitive dollar amounts to qualitative or intangible benefits.)
- (ix) Technical considerations - summary of technical issues including risks and constraints associated with each of the most promising options and how these have influenced the

selection of the preferred option. The question of the compatibility of new and existing equipment in terms of both intercommunication and systems transfer should be addressed.

- (x) Policy constraints - a statement on the extent to which Government policy considerations restrict or influence the determination of available options. Specific justification should be given for a recommended option where it appears to be in conflict with such policies.
- (xi) Action Plan - a statement on the planning processes and systems methodologies to be used. This should detail the expected timetable for implementation together with staff required, including contracted staff or consultants, classifications and costs. It should also explain in detail the financial processes in relation to the annual budget.
- (xii) Industrial issues - details should be provided of consultation arrangements with users and their staff associations on the proposal, and of industrial relations issues which have, or are expected, to arise. The results of a job impact study showing, inter alia, the effect the system is expected to have on staff levels and classifications and on occupational health and safety should also be included. The study should have been developed in consultation with the appropriate staff associations.
- (xiii) Australian Industry Participation - an outline of the hardware, software and services that could be supplied by Australian industry with particular reference to offsets and government purchasing preference. If no such participation is thought possible, reasons should be given.
- (xiv) Proposed Method of Acquisition - by public tender or Certificate of Exemption. If the latter is used the reasons should be stated and if they are commercially sensitive the Committee should be informed. A statement should also be made about the proposed method of acquisition, e.g. by lease, rent or outright purchase and justification given for the preferred option.
- (xv) Consultation - a copy of any relevant comments submitted by the Public Service Board, Department of Finance, CSIRC, Department of Employment and Industrial Relations, Department of Local Government and Administrative Services and the Australian Audit Office, private consultants and staff associations.

- (xvi) Consequence of not proceeding - an assessment of the consequences and risks incurred in the event that the proposal does not proceed.
- (xvii) Advanced technology - an assessment of the extent to which the proposal involves the use of advanced technological facilities not yet in common use within the private sector and/or the public sector.

11. SUPPORTING DOCUMENTATION - departments/authorities should also include in their submission to the Committee copies of pertinent supporting documentation including:

- the most recent version of their ADP Strategic Plan
- the current Corporate Plan
- a Job Impact Study Report
- any independent consultant's reports on the proposal

12. It will be the Committee's policy to avoid delaying the tender and acquisition processes unduly. It is in the department's/authority's interests to ensure that it provides the Committee with the information outlined above as soon as possible so that the Committee's investigations are progressed in an orderly and timely manner.

13. It is expected that the head of the department or authority concerned will attend the Committee hearings to explain the need for the acquisition and their personal commitment to its success.

14. The Committee will make its recommendations in reports to Parliament from time to time. Should the Committee's report be completed and the Parliament not be sitting, alternative arrangements will be made to release the report. Changes to the Committee's requirements will be advised as appropriate.

15. Should you require clarification of any of these requests or wish to offer constructive comment on them, I would be pleased to discuss the matter with you.

M. J. Talberg  
Secretary  
21 May 1985



PRIME MINISTER  
CANBERRA

JAN. 17 1986

Senator G. Georges  
Chairman  
Joint Parliamentary Committee  
of Public Accounts  
Parliament House  
CANBERRA ACT 2600

APPENDIX 2

Letter from Senator Walsh of 17 January 1986  
referring the Australian Audit Office ADP Acquisition  
Proposal to the Public Accounts Committee.

Australian Audit Office Submission  
of 26 February 1986

Dear Senator Georges

Recently the Government gave in-principle approval to a proposed acquisition of computing and communications facilities by the Australian Audit Office. Since capital expenditure in excess of \$5 million is involved, a condition of the Government's approval is that the proposal be referred to your Committee for review.

I am writing now to let you know that I have asked the Auditor-General to transmit to the Committee a formal submission on this matter. I understand from Mr Monaghan that he expects to be able to furnish the submission to you early in February.

I should appreciate it if, once the submission has been lodged, the Committee could undertake its review and provide comments to the Government and the Auditor-General, as soon as possible.

Yours sincerely

PETER WALSH  
Minister Assisting the Prime Minister  
for Public Service Matters



OFFICE OF THE  
AUDITOR-GENERAL

M85/326

26 FEB 1986

Senator G. Georges  
Chairman  
Joint Parliamentary Committee  
of Public Accounts  
Parliament House  
CANBERRA ACT 2600

Dear Senator Georges

I refer to the letter to you of 17 January 1986 from Senator Peter Walsh, Minister assisting the Prime Minister for Public Service Matters, advising you that the Government had given in-principle approval to a proposed acquisition of computing and communications facilities by the Australian Audit Office (AAO).

Senator Walsh advised you that 'Since capital expenditure in excess of \$5 million is involved, a condition of the Government's approval is that the proposal be referred to your Committee for review.'

Accordingly, attached for the Committee's consideration is the AAO submission in relation to its proposal to acquire computing and communications facilities. A copy of the AAO's ADP Strategic Plan is also attached.

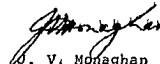
The AAO is in the process of developing a Request for Tender and is continuing detailed planning for the development and implementation of the information systems and other facilities proposed. The draft Request for Tender should be available in early April and a copy will be provided to the Committee. Other detailed information resulting from continued planning will be provided as it is prepared.

My officers are available to assist the Committee should it have any specific questions in relation to the proposal. Mr Max Shanahan, Assistant Auditor-General, and Mr Bruce Rossell, Director, Computer Services, could be contacted in the first instance. I understand that those officers have previously held discussions with Dr Capp of the Secretariat in relation to the AAO proposal.

As the submission indicates, the impetus for the proposed developments is essentially user-driven, and there continues to be heavy user involvement in the planning and implementation of the proposals. I add that I myself take a close personal interest in the AAO's information systems, which I consider to be of crucial importance to my effective performance of my statutory responsibilities.

I am happy to assist the Committee in its deliberations in any practicable way, including by attendance at Committee hearings. I look forward to the Committee's favourable consideration of the proposal.

Yours sincerely

  
G. V. Moynihan  
Auditor-General



AUSTRALIAN AUDIT OFFICE

SUBMISSION TO JCPA

FEBRUARY 1986

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EXECUTIVE SUMMARY

- 1. Background
  - 1.1 Continually, during recent years, the Australian Audit Office (AAO) auditees have been moving to more sophisticated and more complex data processing (DP) and management information systems in order to improve their own productivity and expand their capacities to meet the increasing demands placed upon them. At the same time the AAO's workload has risen as the activities of government departments and authorities have grown and new authorities have had to be audited; and as the focus of audit activity has changed to a comprehensive audit approach encompassing efficiency and cost effectiveness as well as financial regularity.
  - 1.2 The AAO has been able to undertake only minimal auditing of the computer aspects of major automated processing systems in many large departments and statutory authorities; and has been unable to review these systems regularly to ensure that changes to systems have not affected their reliability. Yet these systems are the foundation of agencies' major operational activities including accounting processes, inventory control and purchasing, payroll preparation, taxation assessments and recording and welfare benefit payments. Reliance on review of manual procedures and limited use of computer assisted audit techniques introduces a level of risk in the formation of audit opinions by the Auditor-General or his delegates.
  - 1.3 The AAO continues to accumulate backlogs in audit examination of automated accounting packages nowadays being introduced by many auditees, and is even further behind in the examination of auditees' computerised systems for delivery of services and provision of management information.
  - 1.4 The issue of productivity is now an issue of critical importance to the AAO. Over the last 10 years:
    - (a) Budget outlays have increased from \$16.2 billion to \$63 billion (in real terms a doubling)
    - (b) Budget Revenues have increased from \$15.8 billion to \$57 billion
    - (c) the number of statutory authorities, business undertakings and the like subject to audit has increased from 120 to 180

- (d) there has been the transformation in the scope of the audit focusing attention on efficiency and cost effectiveness issues as well as financial regularity, and
- (e) there has been a continued growth in the number and complexity of computer systems used by auditees. For example total annual expenditure on ADP rose sharply from \$198 million in 1979-80 to \$460 million in 1983-84..

In addition to these factors there has been a growth in Commonwealth functions together with a substantial increase in the complexity of operations subject to audit.

- 1.5 The AAO requires improved computer procedures and systems to assist the planning, management and conduct of audits including:
- (a) microcomputer based spreadsheets and advanced computer assisted audit tools
  - (b) a revised Management Audit Information System (MAIS) offering more flexible information recording and retrieval facilities
  - (c) systems for retrieving ready reference information such as legal opinions and AAO precedents, and
  - (d) an auditor profile system to assist in the allocation of staff to audit tasks.

The AAO also requires computer-assisted office support systems including systems to support personnel, registry and library functions, and standard word processing and document transfer facilities.

- 1.6 In an attempt to meet the increasing demands of technology changes the AAO has used microcomputers and the CSIRONET computer bureau to establish the role of computers in improving the productivity and effectiveness of auditors. The AAO now requires a central mainframe computing facility as well as a network of some 250 workstations together with communication facilities to be able to further develop and extend use of the systems.
- 1.7 The AAO proposes a phased approach to the acquisition and development of systems. The first phase will be the acquisition of the central computing facility and a pilot network. Once this initial facility is stabilised current applications and application development will be transferred from CSIRONET. Other networks will then be progressively implemented. Additional workstations (particularly portable microcomputers) will be progressively acquired over the following three year period. The central computing facility is required to meet the AAO's need for a secure computer site under its own control and because at the second stage the

expenditure on CSIRONET will have grown from the current level of \$200,000 to \$800,000 per annum. The need for Australian content will be taken into consideration when determining the hardware and software to be acquired.

- 1.8 Although the growth in the cost of computer processing associated with audits would make the immediate acquisition of a central computing facility cost justifiable, the phased approach will minimise the risk involved with a major increase in use of technology, while providing the AAO with the computing facilities required. The phased approach also recognises the scarcity of resources, the need for budgetary restraint and the Government's requirement that acquisitions be clearly inescapable and incapable of deferral.
- 1.9 The estimated total additional expenditure will be \$12.8 million over the period until 1989-90. The estimated total capital cost of \$5.9 million (June 1985 prices) spread over the period till 1989-90 (Attachment A refers), includes network \$3.1 million, mainframe \$1.5 million, development software \$0.8 million, and environment \$0.5 million. Development and ongoing costs (including bureau charges for additional computing time) add \$1.9 million, while extra staffing requires \$4.4 million. The proposal involves an AOSL increase of 12 in 1986-87 and 11 in 1987-88. Accommodation costs are estimated at \$0.6 million for a computer site and additional staffing.

## 2. NATURE OF AND JUSTIFICATION FOR THE PROPOSAL

### 2.1 The AAO proposes to acquire a combination of three levels of DP facility:

- (a) a central Computing Facility and associated application development software which will be used for the central information systems that require sophisticated development software and/or need to be accessed from all areas of the office. The plan envisages that the central computing facility will be an IBM compatible computer facility equivalent to an IBM 4381 to be installed in 1987-88. An upgrade to cope with predicted growth in user demand has been planned for 1989-90. Until the initial acquisition the AAO will continue to use CSIRONET to develop systems at an estimated annual cost of \$800,000
- (b) a network which will be used to provide some local processing in each State but will, in the main, provide a front end to the central applications, provide office automation and local shared storage and printing facilities. It is proposed that all networks will be established as local networks which can, if necessary, operate independently of the central computing facility. Such local networks can be implemented as local area networks (LANs) with file servers and print servers or as networks associated with multi user mini (or super micro) computers, and
- (c) a microcomputing facility, either portable, stand-alone or connected to the network, to provide microcomputer tools (spreadsheets, word processing etc) for use by Audit staff. As shown in the ADP Strategic Plan page 32 these will be implemented progressively over a 4 year period.

#### Costs

- 2.2 In summary it is estimated that the total cost of the project over the next five years will be in the order of \$20,000,000. However the AAO will absorb most user costs including expenditure on computer time and computer services staff. It is estimated that the additional cost to the AAO in the five year period will thereby be reduced to an amount in the order of \$13 million.

#### Benefits

- 2.3 The aim of the introduction of the systems will be to improve the efficiency of the AAO and thus to assist it to meet the demands of an increasing workload with minimal additional staff. Particular benefits will include:

better selection of audits through use of Audit Planning and Control system

qualitative improvement in the audit product through the use of computer facilities to plan and support audits and information retrieval systems, and

a significantly enhanced capacity to undertake comprehensive audits of large and complex information processing systems.

- 2.4 The issue of productivity is now an issue of critical importance to the AAO. In recent years there has been a shortfall between audits programmed and audits undertaken. Because of the Auditor-General's statutory responsibilities priority must be given to the audit of financial statements. Limited remaining resources are engaged on efficiency and other projects but as these are not mandatory audits, they are performed only to the extent that resources permit, not to the extent that is considered to be appropriate in relation to AAO objectives.
- 2.5 A major emphasis of the proposed systems is to promote better management information and to assist audit planning, control and operations. Expected benefits are in the form of improved audit management through penetrative planning and assessment of risk, better priority determination, and, an improvement in the overall audit product including the ability to employ advanced techniques in the audit of complex systems. Benefits are extremely difficult to quantify in monetary terms, but relate to the ability of the AAO to perform more and better audits with minimal need for staff increases.

#### Audit Office Future Capability

- 2.6 The proposed developments must be considered in the light of the continuing growth of use of computers in the Australian public sector. The AAO audits some of the major users of computers in Australia, and the impact of DP on the audit task continues to escalate. The computer will become more and more an essential ingredient in carrying out effective auditing of systems developed by auditees. Auditor staff must become familiar with data processing so that they can effectively audit those auditees using computers. Experience has shown that auditors will not gain the required knowledge of computers solely from attendance at training courses. They must also make use of modern computing tools if they are to fulfil adequately the tasks expected of them.
- 2.7 This proposal therefore aims at providing all Audit staff with access to modern computing facilities 5 years from commencement of the project. This is considered to be an essential aspect of the AAO's overall strategy for maintaining its audit capability at a time of continually increasing computerisation of the systems and functions to be audited.

## 3. ADP OBJECTIVES

- 3.1 Through its public reports the AAO assists Parliament to improve accountability for the efficient and effective use of resources in the public sector.
- 3.2 To meet the Auditor-General's statutory responsibilities, each year the AAO plans and carries out audits in departments, statutory authorities and other Government agencies. Planning is aimed at providing a comprehensive cyclical coverage encompassing the evaluation of legal compliance, financial regularity and efficiency.
- 3.3 In fulfilling the Auditor-General's responsibilities it is considered essential that the AAO have in place, computer based management information systems that will support the planning of audits, the allocation and control of resources to audit tasks and the measurement of performance against its objectives. It is also essential that the AAO support the activities of its staff with information systems and computer based support tools that will enable more efficient and effective use of available staff.
- 3.4 One of the principal DP objectives of the AAO is to seek improvement in the productivity of audit staff through use of computer technology.
- 3.5 The AAO is concerned to ensure that it maintains an adequate capability to undertake DP audits because of increasing use of computers by auditees and the growing complexity of the systems involved. In this regard the AAO has three major objectives. These are:
- (a) to increase the capacity of field audit staff to undertake DP audits and thus to decrease the reliance on DP specialists in DP auditing
  - (b) to maintain an appropriate level of DP skills within the AAO to undertake audits of all degrees of complexity, and
  - (c) to identify and address emerging DP issues that might impact on the audit task and identify and develop appropriate methods and techniques.
- 3.6 The principal objective of the AAO in its acquisition of such facilities will be the establishment in a cost-effective manner of the hardware/software/communication facilities needed to support the development and implementation of the systems known to be required by the AAO. Emphasis will also be placed on the following:

(a) Ability to take advantage of changing technology

There are many potential applications of technology that could have a significant impact on auditors in the future. These include improved software for decision support and the merging of voice with text. While the AAO does not wish to be in the forefront of technology used by auditees, audit staff must be aware of the technology used by auditees. It is the AAO's aim to implement a strategy for a computing environment that will enable technology advances to be introduced if considered of benefit to the AAO.

(b) Flexibility

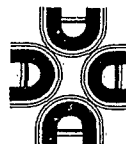
The AAO requires a computing environment that will allow it the maximum flexibility in its use of the computer to assist the audit task. To achieve that environment it is considered that an IBM compatible central computing environment is highly desirable.

(c) Control, Security and Availability

One of the issues of concern to the AAO is the security of data and computer facilities. The AAO deals with information gathered from a wide range of government installations of varying degrees of security classification. Security of access must be maintained at the highest level.

## 4. CORPORATE PLAN

The AAO Corporate Plan was developed in 1984/85 and published as a draft in a Staff Circular of 22 November 1985. Action is now being taken within Central Office Divisions and Regions to implement the Plan. A copy of the related Staff Circular follows.



AUSTRALIAN AUDIT OFFICE  
Canberra, ACT 2601

# Staff Circular

No. 1985/44 of 22.11.85 File Ref. #84/267

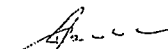
## AAO CORPORATE PLAN - CIRCULAR NO.4

Further to Corporate Plan Circular No.3 (1985/30) work has been completed on drafting the strategies and policy approaches to be adopted in attaining the AAO's Corporate Goals and Objectives. This is the third level of documentation necessary to form the AAO's initial Corporate Plan.

2. Following discussions with senior management and members of the Corporate Plan Steering Committee the Auditor-General has endorsed the attached "Strategies and Approaches to Achieve the Corporate Goals and Objectives".

3. The attached document will now be circulated to Staff Associations. Subject to consideration of any further comment from AAO staff and the views of the Staff Associations it is intended that the Plan be formally adopted. As previously advised, the Plan will be a flexible instrument and, in any case, subject to annual review.

4. In the interim, I would be grateful if Division Heads and Regional Managers proceed to implement the strategies and approaches outlined in the attachment.

  
D. Hill  
Deputy Auditor-General

Attach

DISTRIBUTION : ALL STAFF

AUSTRALIAN AUDIT OFFICE CORPORATE PLAN

STRATEGIES AND APPROACHES TO ACHIEVE  
THE CORPORATE GOALS AND OBJECTIVES

CORPORATE GOALS

The first Goal is:

Improve the economy and efficiency of public administration in the Commonwealth sector and its accountability to the Parliament and the community through :

- (a) undertaking comprehensive auditing of the Executive and Commonwealth agencies; and
- (b) reporting to Ministers and the Parliament and assisting Parliamentary Committees.

This Goal reflects the statutory responsibilities of the Auditor-General. It seeks to make explicit the fundamental reason for the institution of the AAO and the contribution it should make to the proper, efficient and effective operation of government.

The first element of this Goal refers to the comprehensive audit approach which encompasses planning, programming and conduct of a cycle of audits that examine

- . legal compliance
- . financial regularity, and
- . economy and efficiency.

The Auditor-General's reporting responsibilities for most government agencies are specified in legislation and usually involve a requirement of dual reporting to Ministers and to Parliament. The legislation, however, gives the Auditor-General considerable discretion in determining the nature and extent of his reports.

The second element of the Corporate Goal should be read as meaning that, as a general rule, all material audit findings are reported fully to auditees, Ministers and the Parliament and in a timely manner.

The second Goal is:

Develop and sustain the AAO as a centre of auditing excellence :

2.

- (a) the AAO to be a leader in Public Sector audit standards and practice;
- (b) the AAO to be exemplary as regards the efficiency, economy and effectiveness of its operations and in accounting for the performance of its functions;
- (c) staff to be motivated and professionally competent; senior staff to attain wide experience and recognised stature in the Commonwealth administrative milieu.

This Goal seeks to ensure that the total activities of the Office are and are seen to be beyond reproach.

Both in Australia and overseas there has, in recent years, been a growing community demand for government agencies to be more accountable for their actions. Concurrently also there have been rapid technological developments that allow agencies to expand their activities significantly. These trends have attracted attention from audit institutions both nationally and internationally. As well these institutions have been concerned to extend the traditional form of compliance and regularity auditing into "value for money" or efficiency auditing.

As a member of the International Association of Supreme Audit Institutions (INTOSAI) Australia is a member of the INTOSAI committee charged with developing public sector auditing standards that might have international application, and is the Group Co-ordinator on General Standards. Clearly, the AAO must also be a leader in developing public sector auditing standards and practices within Australia. Hence the first element in this Goal.

The Tokyo Declaration<sup>1</sup> points to the need for Supreme Audit Institutions to be conscious of their own accountability. In harmony with the Declaration, the second element of the second Goal refers to the AAO as being "exemplary" in its operations and in accounting for its performance. That is, the AAO should strive to achieve standards of performance and accountability that are "fit to be imitated". Although such standards may not be easy to attain (and maintain) the AAO cannot aim any lower if it is to aspire to a moral - as distinct from legal - authority to take to task other public agencies.

The final element in this Goal takes into account a practical fact of administrative life. That is, if officers coming through the professional auditing stream seek to have before them the prospect of advancement right to the top of the AAO, they must

1. Tokyo Declaration of Guidelines on Public Accountability: Asian Association of Supreme Audit Institutions (ASOSAI), Tokyo, 1985.

acquire that breadth of experience in the general workings of the Administration, and in its policy and program activities, which will give them recognition and respect at top levels of the government bureaucracy.

#### CORPORATE OBJECTIVES

- (1) Co-ordination of all budgetary and planning arrangements within the framework of the corporate goals and objectives:
- (a) with immediate effect, future planning under existing arrangements to take the goals and objectives explicitly into account

In an ad hoc fashion, the planning work performed during recent months has been oriented toward attainment of the goals and objectives, as then set out in draft form.

In order to implement a systematically co-ordinated approach, each Divisional Head and Regional Manager will submit to the Deputy Auditor-General by 1 January 1986 a proposed plan of action linking the activities of the relevant Division/Regional Office with the Corporate Goals and Objectives and related planning mechanisms. Such a plan will also specify the input which would be required from other Divisions/Regional Offices to ensure the Divisional or Regional Office plan to be implemented successfully.

The content of the draft plans will be considered at a Senior Management Conference prior to consideration by the Auditor-General.

- (b) planning arrangements be reviewed and oriented specifically to achievement of the goals and objectives

Planning arrangements developed under Objective (1)(a) above will be reviewed annually at a Senior Management Conference which will advise the Auditor-General regarding amendments to those arrangements and to the Corporate Plan itself. The review will pay regard also to the activities of standing planning machinery, such as the Priorities Review Committee (PRC).

Aspects of the planning arrangements can be monitored progressively through the year by standing machinery. For example, the PRC will, at its quarterly meetings, monitor the achievement in an overall sense of Divisional activities. Similarly the Information Technology Committee will, at its regular meetings, review progress on objectives relative to its activities.

- (c) appropriate linkages between relevant management information and support systems be developed as soon as practicable

Following the Auditor-General's endorsement of the Information Processing Strategic Plan, government approval is currently being sought to its phased implementation.

When the Government's response is known, the phasing in of the approved management and support systems will be implemented by Division D under the guidance of the Information Technology Committee. Where practicable in the meantime, ad hoc arrangements are being made to improve linkages, for instance between human resources budgeting and PRC support systems.

- (2) Effective communication and consultation within the AAO;
- (a) background to decisions on policies, priorities and programs and information on other developments be disseminated systematically through the AAO

Division D will undertake a review of existing arrangements for promulgating information in the AAO with a view to identifying the most useful and efficient mechanisms and by the end of January 1986 will make recommendations for improvements.

In addition to the series of Administrative Circulars, Audit Memoranda and Staff Circulars, the review should note such recent initiatives as -

- a series of Open Letters from the Auditor-General
- monthly meetings between the Auditor-General and each Division (including Acting Director level), and
- more frequent visits by the Auditor-General and senior Central Office staff to Regional Offices.

The review is also to take into account any proposals for effective communication that may emerge from the consultative machinery to be established in accordance with the Industrial Democracy Plan.

- (b) commencing in 1985-86, Regional Managers will visit Central Office at least annually for the Senior Management Conference and for consultations with Central Office Divisions

Subject to the Auditor-General's approval of the full agenda, items for consideration at the 1985-86 Senior Management Conference (additional to discussion of the Corporate planning arrangements referred to at Objective 1) will be formulated by the participants.

- (c) regional staff be involved in planning and briefings for major audit programs



5.

Regional staff are encouraged to submit proposals to Central Office on any aspect of the audit program at any stage of the planning/implementation process.

Central Office Directors are to seek the views of regional staff when compiling their proposed programs and inform those staff of the reasons for variations to or rejection of their proposals. This consultation is to take place on two levels -

- . at the time of preparation of the annual forward work program when broad objectives and descriptions of proposed tasks are wanted, together with supporting information justifying the allocation of resources to the task and assurance that it accords with the general audit approach to the auditee, and
- . at the time of preparation of audit guidelines/field audit plan for the completion of the task, when more detailed information is required to support decisions on the conduct of the audit such as particular operations to be audited, selection of samples and manner of check, allocation of particular staff etc.

In appropriate cases the practice will continue of arranging workshop discussions for officers participating in audit programs for specific major auditees.

(3) Administration of AAO:

- (a) adequate management information and support services be established and maintained

The provision of these services is intended to provide the Office with up-to-date technological support so that the total audit coverage, both required and achieved, can be determined, monitored and co-ordinated.

The systems proposed in the AAO's Information Processing Strategic Plan are intended to put modern information technology at the service of auditors, amongst other things providing retrieval facilities for information on auditees, past audit activity, precedents, legal advisings etc, and facilitating planning, priority setting and management of audit programs.

In the meantime information systems development is proceeding within the constraints set by available resources.

- (b) respective roles of Central and Regional Offices be fully explained and communication between them improved

The roles of Central and Regional Offices are complementary and interrelated with both striving to achieve the same corporate goals.

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6.

Division Heads will meet regularly with Central Office and Regional Office staff to identify significant communication and/or reporting problems and to initiate appropriate remedial action. An initial series of meetings which took place during the early months of 1985-86 is to be the subject of report to the Auditor-General.

Working arrangements and internal structures in the Central and Regional Offices should be such as to maintain the most effective:

- . planning of audit coverage
- . the co-ordination and management of audits, and
- . alignment of auditee responsibilities with a view to minimising communication lines and contact points between Central and Regional Offices.

Division D will establish a framework for regular review of the allocation of the total audit responsibilities within Central and Regional Offices as circumstances change. Within the resource constraints within which the AAO operates, the aim is to provide a rational apportionment of resources with appropriate classification levels having regard to auditee functions.

- (c) organisational structures to reflect work responsibilities

An effective structure requires the promulgation of clear statements of the authority, roles, responsibilities and tasks appropriate to each level in the organisational structure as well as detailing the attributes and skills required. Division D will continue to develop job descriptions which will inform staff of the rationale underlying the organisation structure and the interrelating duties of all positions.

- (d) resource allocation mechanisms be directed to achievement of corporate objectives

The achievement of corporate objectives requires that structures and classifications provide adequate management, policy and general support services to facilitate the function of the AAO.

To this end, Division D will:

- . improve mechanisms to enable management to maintain appropriate balance between resources devoted to planning and other corporate activities and those available for the management and conduct of audit programs
- . concomitant with the review arrangements referred to at Objective 3(b) above, undertake an examination of the management support structure, and
- . review the application of position classification standards in the AAO.

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## (4) Personnel Management:

- (a) personnel management programs be established in accordance with Part 11A of the Public Service Act

Programs under Part 11A comprise:

- Equal Employment Opportunity (EEO) Program, and
- Industrial Democracy (ID) Plan.

In accordance with the legislation, the AAO has formally lodged an EEO Program and an ID Plan with the PSB. Division D will ensure that the strategies in the Program and Plan are pursued and will initiate reviews in accordance with the Act.

Developments pursuant to the EEO Program and the ID Plan will constitute inputs into the implementation of the Corporate Plan, and are to be taken into account in the planning arrangements referred to at Objective (1). The consultative machinery to be established pursuant to the Industrial Democracy Plan is to be kept informed of progress in implementing the Corporate Plan.

- (b) staff selection processes be designed to promote the efficiency of the Office

This objective implies strict application of merit principles in selection of persons for appointment or promotion to positions in the AAO, and for specification of selection criteria appropriate to the Office's needs. It also requires the development of a recruitment program with procedures designed to attract and acquire sufficient highly qualified staff to meet the assessed human resource requirements of the Office, and ensure that approved levels of staffing are effectively maintained.

Processes for refining selection criteria and maintaining proper selection procedures are part of the continuing function of Division D under the guidance of the Deputy Auditor-General. All Divisions and Regional Offices share in the responsibility for correct application of criteria and adherence to procedures.

In developing the recruitment program, Division D is to consider the merits of:

- a continual program of action to recruit staff
  - advertisements framed to highlight the positive aspects of a career in the Office, and
  - options for minimising delays between interviews and appointments.
- (c) staff development programs give emphasis to interchange both inside and outside the Public Service and within the AAO

As well as maintaining professional training to facilitate the development of personal skills and abilities, Division D will develop formal arrangements to facilitate the interchange of AAO staff. In the longer term such interchanges would be of mutual benefit to the AAO and to participating organisations.

- (d) adequate arrangements be established for staff counselling and career planning

To assist officers in attaining their potential, Division D will, over a 3 year period, progressively develop appropriate assessment and counselling processes, including processes for identifying possible career paths. It is hoped that by the end of this period procedures would be in place for regular formal staff assessment, with ongoing on-the-job performance counselling.

- (e) opportunities be created for staff to broaden experience and as senior staff to establish a standing in the administrative community

Division Heads and Regional Managers should encourage staff to participate in executive development, management improvement and similar courses aimed at improving managerial competence. Staff should also be encouraged to participate in executive roles in appropriate professional organisations, and seek approval to accept invitations to address seminars, conferences and the like, and similar activities.

## (5) Program Management

- (a) determination of program objectives, schedules and resource requirements be based on realistic estimation processes

The audit work program is set by the Auditor-General on the advice of the PRC. Under the guidance of Central Office Division and Branch Heads, Directors in consultation with Principal Auditors are responsible for proposing tasks, recommending their scope and providing assessments of resource requirements. As indicated at objective 2(c), Regional staff are encouraged to suggest areas of audit coverage.

Division D will establish a framework to ensure the consolidation of the above data and its presentation to the PRC, and will provide the PRC on request with estimates of staff resource availability overall and for each field branch in the light of PRC decisions. Division D is responsible for disseminating information to ensure their implementation.

Under the guidance of the PRC, operational Divisions, as a high priority task, will establish procedures to identify the total audit task which would be necessary to provide adequate assurance to the Parliament over a comprehensive audit cycle, and record in liaison with Division D the range of work which, although

necessary in that context, has not been accommodated, in practice, in audit programs.

- (b) procedures provide for supervision, monitoring, and review of performance

Responsibility for administering the approved work program rests with operational Division Heads in co-operation with Regional Managers. Each operational Division Head will arrange for the issue to Regional Offices of the detailed program approved by the PRC, nominating tasks in priority order. Directors and Principal Auditors will co-operate closely to ensure that PRC requirements are clearly understood. In the light of the workload situation, Directors may arrange with Principal Auditors for:

- the review function be undertaken by Central Office
- guidelines to be prepared by Regional staff, and
- appropriate representation at opening/exit (and any other) interviews.

Regional Managers are responsible for ensuring that:

- Principal Auditors provide Directors with timely advice of progress with audits undertaken to approved standards
- scarce resources are not wasted, and
- timely signals are given to Directors when overruns are likely.

On completion of major efficiency/project audits, and in respect of major auditees, Division Heads should arrange post audit reviews of the performance of the audits, and dissemination of review results as appropriate.

Machinery is to be developed progressively for systematising arrangements for performance review, including measures to improve the evaluation of performance. Division D is to mount a high priority study to review the appropriateness of existing time recording and productivity measurement procedures.

- (c) officers be accountable for meeting program objectives to schedule and within resource provision

In harmony with Goal 2(b) and the related planned appointment of a full-time internal auditor, Division Heads are to account quarterly to the PRC for their management of the resources allocated. Division Heads may vary the Divisional program provided:

- (i) there is no net increase or upgrading of priority rating in overall hours or hours in Regional Offices, and

- (ii) they report to the next PRC meeting.

Division Heads are required to obtain prior PRC approval (out of session if necessary) to significant proposed program changes falling outside the parameters.

Division D (PRC Secretariat) is to provide the PRC with information concerning overruns, and Regional Managers' exercise of delegations to increase hours for particular audits.

(6) Audit Methodology and Practice

- (a) emphasis on audit of economy and efficiency aspects be increased without eroding standards for regularity and compliance auditing.

Audit planning and performance will, as far as possible, be directed to promoting improved government administration from both the financial accountability and efficiency standpoints.

Effective utilisation of human and other resources, including use of up-to-date auditing techniques and information technology with consequent continuing improvement in audit productivity, would be expected to enable adequate audit coverage designed to enable the Office to meet its mandatory attest responsibilities, while devoting increased attention to discretionary areas. This will enable the Office to respond to the perceived expectations of the Parliament, auditees and the community that more audit coverage will be given to aspects of economy, efficiency and improvement in government administration. As an initial target Division Heads are programming in total for the completion of 20 to 30 formal efficiency audits each year. There will continue to be a substantial effort in the form of project audits directed to efficiency aspects but not formally designated as efficiency audits.

- (b) up-to-date techniques and technology be applied and continually reviewed

Division D will continue to exercise its function of developing audit techniques and technology in such areas as statistical sampling and analytical methods and in expanding the use of DP resources, and to take account of developments in technology and its use by auditees. This Objective is closely related to Objective 3(a), and its attainment will be enhanced by provision of modern information processing facilities.

- (c) arrangements for internal audit and quality assurance be kept under review

Office policy is to ensure that internal policies and accounting controls are observed and maintained at a proper standard, and that effective management is in place. In this context, the internal audit function has been expanded to keep top management informed of relevant matters.

In accordance with professional auditing standards for supervising the quality of audit work performed in the Office, the Office has an internal system of review. Division D will continue to monitor this activity and recommend measures to improve its efficacy.

- (d) arrangements be developed for assessing trends in productivity

It is necessary that output in work categories be measured against such standards as are available, and that productivity changes be assessed in the light of a possible need for improvement and in the context of the Office's ability to cover its workload with the resources employed. Existing arrangements will be reviewed by the study mentioned at Objective 5(b).

(7) AAO's External Relations

- (a) the Office should seek to foster good relations with Parliamentary Committees and the central agencies of the Executive Government

Whilst dealings with Parliamentary Committees are almost solely the province of Central Office, those with central agencies apply universally.

Division Heads should encourage staff to co-operate with Parliamentary Committees to the maximum extent consistent with any statutory constraints; this requires regular liaison with Committee staff and a demonstrated willingness to meet Committee requirements

Division Heads should encourage staff to strive to develop effective contacts with 'opposite numbers' in central co-ordinating agencies to obtain an improved awareness of policy development and program implementation, and

Regional Managers will encourage staff to establish adequate liaison with representatives of central agencies in their geographic area.

- (b) in relations with bodies audited by the AAO there should be adequate explanation of Audit requirements and activities, and involvement of senior officers where appropriate, to minimise misunderstandings and avoidable conflicts

Division Heads should liaise with the senior officers in those departments and other organisations for which they have audit responsibilities, so that broad understandings of the roles and responsibilities of each are mutually understood. Division Heads should ensure their senior staff also maintain adequate liaison with auditees.

- (c) The AAO should co-operate with academic institutions, professional bodies and the media:

- (i) including contributions to proceedings of professional meetings, and  
(ii) publication of reference material

All officers are encouraged to keep abreast of developments concerning audit practices and standards and are invited to propose or comment on new or revised audit practices or standards.

The AAO will encourage participation in the activities of academic and professional bodies. The AAO will, where invited and where practicable, provide appropriate officers to address or participate in meetings of interested professional organisations.

Division D will put to study the scope for wider dissemination of public sector auditing issues.

- (d) the AAO should co-operate with State and overseas national audit offices, individually and in conference, with the general purpose of improving the quality of government auditing through the exchange of information and the provision of advice and assistance

At the national level, the AAO will continue its active participation in the Australian Area Auditors-General Conference.

On the international scene the Office plans to continue its involvement with, and contribution to, the activities of global and regional audit bodies such as:

- International Organisation of Supreme Audit Institutions (INTOSAI)
- Asian Organisation of Supreme Audit Institutions (ASOSAI)
- the Conference of Commonwealth Auditors-General, and
- the South Pacific Audit Forum.

Additionally, training will be provided to audit officers from State and overseas audit institutions, as requested and as resources permit, with the aim of developing overall/general audit competence. This will be reinforced by publication of AAO training material.

## 5. ADP STRATEGIC PLAN (SUMMARY)

A copy of the AAO ADP Strategic Plan is attached.

Current Reliance of departmental operations on DP

- 5.1 The AAO's use of DP on its audit activities is at present fairly restricted. The AAO has in place a management information system (MAIS) run on CSIRONET CYBER. This system records information on planned audit tasks and actual coverage.
- 5.2 The AAO has approximately 50 IBM PCs. Audit staff make use of various generalised support software packages on these microcomputers. The main packages in use are MULTIPLAN, MULTIMATE, and PFS, which are available for use by all staff. The package REVELATION is also used by DP specialist staff in Computer Services Section to develop a number of small planning and administrative systems.
- 5.3 The AAO makes use of computer facilities in the conduct of audits. Various CAATs (Computer Assisted Audit Techniques) are in operation at auditee computer sites and are used in audit tasks. The AAO also has in place a project to implement a prototype generalised Auditee File Analysis Facility aimed at extending CAAT facilities to field audit staff. This facility is run off CSIRONET FACOM.

## Proposed Developments

- 5.4 As a result of the review of the AAO computing requirements it is proposed that the AAO develop an integrated Australia-wide office information system over a 3 year period to be fully implemented over a 5 year period. This system is specified in more detail in the Broad System Specification (Attachment A of the ADP Strategic Plan) and includes the following components:

Audit Planning and Control (APAC) Systems. A range of systems based around an integrated database to assist the planning of audits (including task selection) and the implementation of work plans. This includes the following sub-systems:

- . Audit Portfolio System
- . Audit Planning System
- . Audit Monitoring System, and
- . Forward Scheduling System.

- . Auditor Profile Systems. An information system to access the APAC database and data files associated with various AAO support systems to provide a profile of staff and to assist in a selective allocation of staff to audit tasks
  - . Audit Support Systems. A range of computer systems and software facilities to support the audit evaluation including microcomputer based facilities such as spreadsheets, working paper facilities and the use of central mainframe computing facilities to allow the testing of auditee computer based systems
  - . Office Information system. A system to support policy development, planning and audit activities providing integrated text retrieval on issues such as Legal Opinions, Office Precedents, previous audit plans and reports
  - . Office Support systems including Personnel, Registry, Library systems, and
  - . Office automation systems, primarily standard word processing and electronic document transfer facilities.
- Development Strategy
- 5.5 The AAO is proposing to adopt a phased approach to the development of systems.
- 5.6 The first phase will be prior to and in parallel with the acquisition of equipment and facilities. It will involve the development of interim and pilot systems. Such systems will be developed using IBM PCs and/or CSIRONET FACOM. The systems will be limited in scope but their development will provide some interim solutions and through their use will assist to define the AAO's final requirements.
- 5.7 The second phase will commence once a decision is made in relation to the hardware/software to be selected. It will involve the development of the high priority systems: Audit Planning and Control, Office Information and Audit Support facilities.
- 5.8 The third phase will involve the acquisition/development or implementation of the office support systems.
- 5.9 All systems development will be in accordance with the normal systems development life cycle (SDLC) of Feasibility Study, Specification, System Design, Development, Acceptance, Operation and Review. User involvement in the specification and design of systems will be sought with the establishment of a joint team for each project. User involvement will be facilitated as much as possible by use of the prototyping techniques during development.

- 5.10 In general, the AAO will be seeking software solutions that provide flexibility to allow future changes to systems. While the various systems will be developed in the main by DP professionals, software facilities to allow non DP staff to develop their own applications are considered essential.

#### CAPACITY PLANNING

- 5.11 One of most significant problems faced by the AAO in developing the ADP Strategic Plan has been in the area of capacity planning. The various systems proposed to be introduced will not directly substitute current systems. They are likely to result in a major variation to work patterns.
- 5.12 Steps are being taken to refine further the estimate of demand on the system and the capacity required. However the difficulty in estimating demand represents a major uncertainty in the proposal. Because of this uncertainty the AAO will be seeking facilities in its RFT to measure demand on the system and performance achieved. This will enable early recognition of potential problems and enable steps to be taken to seek any necessary expansion/upgrade of elements of the network or the central facility.

#### USER EVALUATION AND TRAINING

- 5.13 The AAO does not anticipate any major problems in user acceptance of systems. The majority of audit staff have a degree of DP literacy. Over the last 7 years the AAO has recognised that all auditors have need for DP knowledge. Introductory DP and DP audit training is provided to all staff. An increasing majority of audit staff newly recruited have completed some academic studies in DP. Selection criteria specify the need for DP knowledge. Most staff have been given training in the use of microcomputers. Most have accepted the use of microcomputers in the audit task. The major obstacle to wider acceptance and use has been the lack of readily available facilities.
- 5.14 It is recognised that the introduction of such systems will have a considerable impact on users and that change must be introduced gradually.
- 5.15 It is also proposed that a standard menu system will be developed (if it is not provided as part of the selected network/microcomputer software). This will provide a standard interface to microcomputer software facilities and will provide the interface to allow access to the mainframe systems. The general strategy will be to make microcomputer support tools immediately available to audit staff and to progressively provide access to additional facilities on the central computer facilities as they are developed.

- 5.16 It is therefore proposed that computing facilities will be introduced to user staff in three steps:

- |     |                       |   |
|-----|-----------------------|---|
| (a) | Base Level Training   | This will be the initial training given to audit staff once a workstation (computer terminal) is implemented. It will include training in the user front end facility and basic personal support tools available to them. |
| (b) | Access Level Training | This will be undertaken once each workstation is connected to the network. Users will be shown how to access application systems on the network and central facility.   |
| (c) | Application Training  | For each application users will be introduced to the new application as part of the application implementation program.   |

#### Internal Audit Involvement

- 5.17 The Auditor-General has recently introduced an independent internal audit capability within the AAO. In relation to the proposed facility that internal audit function will undertake:

- (i) reviews of controls proposed for DP Systems
- (ii) post implementation reviews of systems in operation, and
- (iii) review of system development methodology.

Comments on the ADP Strategic Plan received from an outside organisation.

- 5.18 The following comment has been received from the Public Service Board

The following comments refer to the 1985 ADP Strategic Plan for the AAO:

The Board supports the proposed investment of approximately \$11m over the period 1985/86 to 1989/90 in computing and communication equipment and software as foreshadowed in the Strategic Plan. The expenditure appears justified on cost effectiveness grounds as well as enhancing the ability of the AAO to more effectively discharge its statutory responsibilities;

The Board notes the key role that will be imposed on and required of senior management in the implementation process if the acquisition proceeds. The introduction of computing facilities on the scale proposed will result in changes in some important areas to the way in which work has traditionally been done. From this perspective it is a shortcoming of the Plan that it does not address matters relating to consultation with staff associations or staff training needs.

2. In the Board's view these factors can significantly affect the pace of successful implementation.'

The estimate of \$11m referred to in the Board's comment corresponds to the revised estimate of additional cost of the order of \$13m, noted in paragraph 2.2 above.

Variations to Strategy since publication of ADP Strategic Plan

5.19 Since the publication of the ADP Strategic Plan the AAO has continued to refine its overall strategy and to examine issues involved in development and implementation of the proposed systems. The most significant changes are:

- (a) the development of procedures for managing the development of Information Systems within the AAO (these procedures are shown at Attachment B), and
- (b) the fact that the AAO no longer seeks to establish a network prior to acquiring a central computing facility. The AAO will seek to establish an initial pilot network in association with the central facility. This will avoid the necessity to link the network to CSIRONET and will enable the network to mainframe link to be tested prior to implementation.

## 6. POST IMPLEMENTATION REVIEW

- 6.1 A review of the AAO's management information needs was undertaken in May/June 1984 in the light of the continuing growth and increasing complexity of Government requirements and administration. The overview of information requirements and future directions arising from this study is at Attachment B. The study identified major deficiencies in AAO information systems particularly in that systems supporting audit planning and management activities. Subsequently a Senior Executive task force was established to undertake a more detailed analysis of management needs and to develop an ADP Strategic Plan for the AAO. The task force considered the potential of the computer to support management in the planning and conduct of the audit task.
- 6.2 The Task Force included strong user representation and consulted widely with auditors and administrators. Its report was essentially user-driven. The first two volumes of the task force report, a Functional Analysis and a Broad System Specification, which proposed a wide range of systems and facilities for the AAO, were presented to and accepted as a broad statement of direction by the Auditor-General and senior management during January/February 1985.

## 7. SYSTEM PROPOSAL

- 7.1 The statement of Broad System Requirements was produced by the Senior Executive Task Force and accepted as a broad statement of direction by the Auditor-General and senior management during January/February 1985. It is embodied in the ADP Strategic Plan which was developed by the Task Force and endorsed by the Auditor-General in September 1985.
- 7.2 The statement of Broad System Requirements indicates the proposed systems including a conceptual description of each. This statement, and the Functional Analysis Statement, indicates how the proposed systems relate to existing systems.

8 ALTERNATIVE DEVELOPMENT/ACQUISITION OPTIONS/  
COST EFFECTIVENESS

## Options

- 8.1 In developing the DP strategy particular consideration was given to the following two issues:
- (a) the need for an IBM compatible environment, and
  - (b) the use of a bureau service (CSIRONET) to provide AAO computing needs in the interim and/or in the long term.

## IBM Compatible Environment

- 8.2 The AAO has decided to seek an IBM compatible central computing facility.
- 8.3 An IBM compatible environment is sought in view of the fact that an increasingly large proportion of auditees (over 60%) use such equipment. With an IBM compatible environment the AAO would:
- be able to select auditee file analysis software and other technical audit software to run on the proposed AAO central site as well as at a range of IBM compatible (and other) auditees' computer installations
  - have proportionately fewer problems in transferring data from auditee sites to the central site, and
  - be able to give AAO staff experience in an IBM environment which will be most valuable in the AAO's overall development of its DP audit capability.
- 8.4 While many of the in-house systems could be developed on other than IBM compatible equipment, it is considered that the selection of an IBM compatible central computing facility would provide the AAO with the most flexible environment in which to handle changing audit requirements.

## Bureau Service

- 8.5 The AAO considered the use of a bureau operation both as an interim solution and as a long term solution to the AAO's needs. It has decided to maintain use of CSIRONET bureau as an interim solution until it can acquire its own computing facilities.



- 8.6 When considering this issue five different alternatives were considered. These were:
1. acquire the mainframe in 1986/87. The network workstation acquisition to be spread over 86/87 to 87/88
  2. as for option 1 but lease the mainframe in lieu of purchase
  3. initially use CSIRONET but acquire a mainframe in 1987/88. The bulk of the word processing network workstations and standalone PCs to be acquired in 1986/87
  4. as for option 3, but instead of using CSIRONET obtain a lower capacity mainframe in 1985/86 with an upgrade in 1988/89. This was costed on both purchase (option 4a) and lease (option 4b), and
  5. use CSIRONET for development and implementation of systems and acquire an upgraded mainframe in 1988/89.
- 8.7 It was decided to choose option 3. Options 1,2 were rejected because appropriate accommodation would not be available and it would not be feasible to acquire equipment in that timeframe. Option 4 was rejected because it was considered that the acquisition of an interim machine would place additional strain on AAO resources which would detract from the planning and control of the overall project. Option 5 was rejected because the use of a bureau is not a satisfactory solution to meeting AAO needs.
- 8.8 CSIRONET was the option preferred for meeting AAO computing needs in the interim because of the current AAO commitment to that service. However, the AAO continues to have operational problems with this service and, while it is proposed to live with these problems in the short term, the AAO does not consider the use of CSIRONET an appropriate long term solution. Although the use of a commercial bureau rather than CSIRONET could provide a more satisfactory service, other enquiries have suggested that this would be a more expensive option.
- 8.9 The use of any bureau service is not satisfactory in that security and control rests with the bureau management and not with the AAO. The AAO would therefore be forced to place some restriction on the data to be stored in the bureau.

## Cost Benefit

- 8.10 As discussed in section 2.5 of this submission, the AAO has not attempted to justify the proposal on the basis of cost savings but rather on the benefits foreshadowed. An attempt was made in the ADP Strategic Plan Section 9, to quantify the benefits arising from the proposal in terms of the additional staff that would need to be employed to achieve the same productivity improvement. This exercise has limited significance and was not used as the basis for the AAO Cabinet proposal.

## 9. POLICY CONSTRAINTS

9.1 There are no known policy constraints relating to this proposal.

9.2 The phased implementation approach, as outlined in 1.8 above, recognises the scarcity of resources, the need for budgetary restraint and the Government's clearly inescapable and incapable of deferral criteria.

## 10. ACTION PLAN

- 10.1 Following funding approval by Budget Cabinet, or forward commitment of funds if not approved for 1986/87, the RFT relating to this proposal will be issued.
- 10.2 There are two management committees which have been set up to monitor the overall project. The Information Technology Policy Committee (ITPC) is chaired by the Auditor-General and includes the Deputy Auditor-General and all First Assistant Auditor-Generals. The ITPC is the top level policy and planning committee. The second committee is the Information Technology Co-ordination Committee (ITCC) which is responsible to the ITPC for the management of the project in accordance with the policies and directions set by the ITPC. The ITCC is chaired by the First Assistant Auditor-General, Corporate Management Division, and includes the Assistant Auditor-General, DP Branch, representatives from the three Audit Divisions together with representatives from the Regional Offices.
- 10.3 The systems development procedures are outlined in two documents titled "Development of Computer Based Systems - Management Control Procedures" and "Guidelines For The Development of Computer Systems". Copies of these documents are at Attachment D. The general systems development methodologies are based on the traditional system development life cycle (SDLC) approach with modifications to cater for prototype development of systems.
- 10.4 As outlined in sections 5.2.2 to 5.2.9 of the ADP Strategic Plan, initially the major systems will be developed as pilot systems with progressive refinement based on user feedback. This should assist to ensure that the systems meet users requirements.
- 10.5 The current timetable for the acquisition and development of systems and of staffing proposed for the project is shown in the ADP Strategic Plan Section 8.
- A more detailed examination is in progress and will be made available to the Committee when completed.

## 11. INDUSTRIAL ISSUES

11.1 In accordance with Industrial Democracy guidelines, the AAO has now established a National Consultative Committee. Copies of the ADP Strategic Plan have been provided to unions and to workplace delegates. Initial discussions have taken place with Canberra based workplace delegates to brief them on the Strategic Plan and to determine the ongoing consultative arrangements. In that meeting it was agreed that there would be continuing consultation under the umbrella of the National Consultative Committee.

11.2 Staff were consulted widely during the development of the ADP Strategic Plan and, commencing in February/March, presentations will be made to staff throughout Australia on the Plan and its implications.

At this stage no job impact study has been developed. Knowledge of DP matters is already a requirement for all audit staff. Staff in audit areas appear to consider that the proposal is essential for the performance of their duties. It is not anticipated that there will be any staff loss.

11.3 While it is anticipated that there will be increased word processing undertaken by audit staff, it is not anticipated that there will be any reduction in the need for typist/ word processing operators.

11.4 Since the proposed systems are essentially information systems, the acceptance of systems by users will be essential to their success. Such acceptance will be facilitated by user involvement throughout the development process. It is however recognized that acceptance will require that the AAO adequately address the ergonomic, environmental and industrial issues associated with the introduction of the plan. The ADP Strategic Plan already identifies a number of issues to be addressed. These are:

- . need for ergonomic furniture/workstations
- . training to be on the job, and
- . training to develop keyboard skills to be provided to all staff.

Steps will be taken to liaise with staff and union representatives to identify any other issues of concern and to agree the steps to be taken to satisfy their concerns.

## 12. AUSTRALIAN INDUSTRY PARTICIPATION

12.1 Discussions have been held with the Australian Information Industry Association (AIIA) and the Australian Computer Equipment Manufacturers Association (ACEMA). Both associations have welcomed the opportunity for discussions before the RFT is issued.

12.2 Formal briefings for Association members in Canberra, Sydney and Melbourne are being provided in February/March. These briefings will allow potential vendors to indicate the suitability of their products or services to the overall requirements of the AAO.

12.3 The main potential areas for Australian suppliers are in the network and software. The AAO is encouraging Australian manufacturers to respond to the RFT in conjunction with other vendors in the form of a consolidated response.

## 13. PROPOSED METHOD OF ACQUISITION

- 13.1 Section 11 of the ADP Strategic Plan details the procurement strategy. Procurement will be by public tender with the only restriction being the specification of an IBM or IBM compatible mainframe.
- 13.2 The case for the IBM compatible mainframe is outlined in section 5.2.5 of the ADP Strategic Plan. A request for a Certificate of Exemption for the restriction to an IBM compatible mainframe is being prepared and will be forwarded to DOLGAS in the near future.
- 13.3 The proposed acquisition schedule is as follows:
- |                  |  |
|------------------|--|
| June 86          | Issue of RFT (open for 2 months)   |
| June/August 86   | Finalisation of evaluation model   |
| August 86        | Tenders close  |
| October 86       | Short list recommendation to DOLGAS                                      |
| February 87      | Recommendation to DOLGAS   |
| April 87         | Contracts issued   |
| May/June 87      | Initial delivery of mainframe and pilot network                          |
| August 87        | Acceptance tests completed - payment for mainframe and pilot network     |
| September/May 88 | progressive delivery and installation of C.O., ACT, NSW and VIC networks |
| July/December 88 | progressive delivery and installation of QLD, SA, WA and TAS networks.   |

## 14. CONSULTATION

- 14.1 The coordination comments from the Public Service Board, Department of Finance and DOLGAS on the Cabinet Submission are at Attachment B.
- 14.2 In addition, we are engaging a consultant to assist with the development of the RFT. This consultancy is expected to commence in March 1986 and will include an assessment of the AAO's overall ADP strategy.

## 15. CONSEQUENCE OF NOT PROCEEDING

- 15.1 The trend to complex computer based systems in auditees, and the resultant increasing workload for the AAO, is likely to continue. The progressive implementation of the comprehensive audit approach, with increased attention to development of appropriate audit standards over the whole of the comprehensive audit activity, will involve a continuing workload increase for some years ahead.
- 15.2 Some significant steps have already been taken, in initiating audits of auditees' planning and development of data processing and management information systems, in raising the capacity of audit staff to audit such systems, in using automated techniques in audits and in developing the AAO's own management information system.
- 15.3 Those steps have been important in helping the AAO to weather the transitional phase toward operating in the new information processing environment, not least in introducing audit staff to the powerful new tools that can make their work much more productive. But these steps fall short of what is necessary, in that environment, for the AAO to be able to provide adequate reporting to the Parliament in accordance with its charter under the Audit Act and other enactments.
- 15.4 To illustrate that proposition it may be enough to mention that, with its present resources, the AAO has been able to undertake only minimal auditing of the computer aspects of many major automated processing systems in a range of large departments and statutory authorities. The AAO finds it impossible to perform the regular review of these systems necessary to ensure that changes to systems have not impacted their reliability. The AAO too often has been forced to rely on the minimal assurance gained from extensive review of manual procedures and limited use of computer assisted audit techniques. A major concern is that this situation introduces a high level of risk in the promotion of audit opinions by the Auditor-General or his delegates.
- 15.5 More generally, the AAO continues to accumulate major backlogs in audit examination of automated accounting packages being introduced by auditees - and is lagging behind in the examination of auditees' systems for delivery of services and provision of management information.
- 15.6 An immediate expansion in the development of the AAO's own data processing and management information systems is required, if the AAO is to be able to fulfil its statutory responsibilities.

## 16. ADVANCED TECHNOLOGY

- 16.1 There are no implications regarding the use of advanced technology in this proposal. The AAO will not accept any solution that is not clearly demonstrable in an existing site or involves the use of unproven technology. The overall nature of the project is technically achievable with existing well proven technology.
- 16.2 However, the AAO is concerned that the solution offered be capable of utilising new technology as it becomes well accepted within existing sites. There are several new technologies such as image processing and integrating voice and data that could be of potential benefit to the AAO. The flexibility to incorporate such new technology is important for the long term viability of the computing facilities.
- 16.3 One area of importance to the AAO and an area that is undergoing rapid development is in the use of lap portable computers. The AAO believes that these devices are of significant benefit to the field auditors. However, there appears to be much activity in this area of the market with several new products, including the IBM lap portable, expected to be available in the next 6-12 months. The AAO will monitor these developments before purchasing any significant number of lap portables.

17.11 Ensure accuracy of processing

17.12 Of particular concern in this area is user computing. The ADP Strategic Plan envisages that audit staff will make use of computer facilities in their audit activities. There is potential for the results to be inaccurate because of inadequate control over testing or verification of results. The ARO will need to implement procedures to ensure staff are trained in software and development/test procedures and are adequately supported.

17.13 Ensure information is archived and recoverable

17.14 With the introduction of the system the main source of information in many situations will be computer based. While hardcopy of original documentation will be maintained the loss of information relating to audits would represent a loss of audit effort during an audit. Loss after the audit could make it difficult to support an audit conclusion. Procedures must exist to ensure that information is adequately archived and not lost as a result of system failure.

AUSTRALIAN AUDIT OFFICE  
STATEMENT OF COST FOR ACQUISITION OF COMPUTING EQUIPMENT  
(\$000's)

CAPITAL EXPENDITURE	1985/86	1986/87	1987/88	1988/89	1989/90	TOTAL
1. Mainframe Hardware		50	1,000	400		1,450
2. Development Software		50	550	150	100	850
3. Network H'ware - Branch Nodes		300	315	165	105	885
4. Network H'ware - Work Stations		765	280	325	295	1,665
5. Network Software		220	109	115	100	544
6. Mainframe Site Preparation (Power & A/C, etc.)		350	100			450
7. Network Site Preparation (Power Conditioning)		60				60
TOTAL CAPITAL COSTS	0	1,795	2,354	1,155	600	5,904
OTHER EXPENDITURE						
Development Costs (excluding staff)						
8. Consultants	20	200	300	50	50	620
9. Computer Time	30	800	600	50		1,480
10. Ergonomic Furniture		50	100			150
11. External Courses		25	50	50	25	150
Total Development Costs	50	1,075	1,050	150	75	2,400
Ongoing Costs						
12. Mainframe Maintenance			30	50	50	130
13. Software Lease/Maintenance		20	110	170	170	470
14. Network Maintenance		50	75	100	100	325
15. Communication		25	100	150	200	475
16. Consumables		50	50	50	50	200
Total Ongoing Costs	0	145	365	520	570	1,600
TOTAL OTHER EXPENDITURE	50	1,220	1,415	670	645	4,000

## ATTACHMENT A

	1985/86	1986/87	1987/88	1988/89	1989/90	TOTAL
TOTAL OTHER EXPENDITURE	50	1,220	1,415	670	645	4,000
Less ABSORBED COSTS						
Computer Time for CAATS		-100	-200	-400	-400	-1,100
Existing DP expenditure		-80	-150	-380	-380	-990
TOTAL OTHER EXPENDITURE (Less Absorbed Costs)	50	1,040	1,065	-110	-135	1,910
TOTAL CAPITAL & OTHER COSTS (Less Absorbed Costs)	50	2,835	3,419	1,045	465	7,814
STAFFING						
17. DP Staff	600	1,320	1,700	1,700	1,700	7,020
18. User Staff	360	780	1,800	1,000	960	4,900
19. Audit Review		30	60	60	30	180
20. Associated Admin. Costs		60	115	115	115	405
Less ABSORBED COSTS						
DP Staff (Item 17)	-600	-600	-600	-600	-600	-3,000
User staff (Item 18)	-360	-780	-1,800	-1,000	-960	-4,900
Audit Review (Item 19)		-30	-60	-60	-30	-180
TOTAL STAFF COSTS (Less Absorbed Costs)	0	780	1,215	1,215	1,215	4,425
ACCOMMODATION COSTS						
Rental (500 sq. m.)		75	100	100	100	375
Fit-out - clerical		150				150
Fit-out - computer		75				75
TOTAL ADDITIONAL EXPENDITURE (Less Absorbed Costs)	50	3,915	4,734	2,360	1,780	12,839
ADDITIONAL AOSL REQUIRED	NIL	+12	+11	NIL	NIL	+23

## MANAGEMENT INFORMATION STUDY

PAPER NO 13

OVERVIEW OF INFORMATION REQUIREMENTS  
AND FUTURE DIRECTIONS

## OVERVIEW OF INFORMATION REQUIREMENTS AND FUTURE DIRECTIONS

1. Previous papers of this Study have identified:
  - (i) The need to develop MAIS as originally intended but using software that will enable timeliness, hierarchical and flexible reporting and accessibility of information. (Paper No 9).
  - (ii) The necessity to apply information storage and retrieval techniques to maintain and access strategic and operational information on auditees. (Paper No 10).
  - (iii) The need to replace the library cataloguing system by September 1985 with a system that provides facilities for detailed cataloguing, loans and acquisition control. (Paper No 4).
  - (iv) The need to upgrade the Registry KWIX system with an automated indexing and marking system by September 1985. (Paper No 5).
  - (v) The requirement for an organisation and staffing control system with provision for staff profile information. (Papers 1 and 11).
  - (vi) The need to standardise and develop management systems for asset recording and control, budget estimates and expenditure monitoring and other management information systems.

2. Apart from the very recent acquisition of personal computers to assist in the audit task, the Office does not have its own computing facilities but relies upon a bureau arrangement with CSIRO. This Study has highlighted the need for the Office to take early action to find alternate processing arrangements for the Library and Registry systems or acquire new systems which meet

the full needs of the Office. The latter is the preferred course. Additionally, Paper No 9 contains arguments why MAIS must be re-developed on new software to meet its original objectives and satisfy the requirements of present and potential users.

3. Because of the need to find new systems for the Library and Registry and to re-develop MAIS, the Office could justify a case to acquire its own computing facilities to process those systems. However, the view of this Study is that the most convincing case revolves around the longer term benefits to the Office of an effective portfolio information retrieval system together with MAIS, Library, Registry and other office management systems. The emphasis should be placed on portfolio information because of the potential size and benefits of such a system.

4. The Study is convinced that the most important area where the ongoing effectiveness of the Office will become absolutely dependent is its ability to collect, retain and use strategic and operational information on its auditees. This information is necessary to ensure that resources applied to the audit task and information gathered as a result of audit activities remains available and useful for future audits, both in terms of planning and undertaking audit assignments. In other words, Portfolio information is seen as an essential resource which must be managed if the Office is to improve its own efficiency and effectiveness.

5. A number of new initiatives have been applied in the last few years in the methodology of audit operations but the Office has not yet fully recognised or committed itself to the importance of maintaining auditee information in a convenient and accessible form. If the Office does not maintain in a sophisticated way information on its audit clients, the audit function will increasingly become one of gathering information instead of analysing and reviewing information and auditees activities.

6. Unfortunately, immediate benefits will not accrue from a portfolio system as it will take a number of years to gather appropriate information on all those matters which should comprise a comprehensive portfolio information base. However, unless there is a progressive development and expansion of information, a considerable amount of staff resources will be wasted and applied less effectively.



7. The position has already been reached where the amount of information that the Office possesses is not capable of being effectively identified or used because it is not preserved and maintained in a logical way for recall or access to assist planning and operational requirements.

8. The development path for required office systems should be in the order of transferring the Library and Registry functions to a new system by September 1985 with the concurrent re-development of MAIS to provide the facilities outlined in Paper No 9. The redevelopment of MAIS will rely upon appropriate software to provide data entry at source, on-line enquiry and user defined report production. As such it should be based on a menu driven, user friendly software package with distributed terminal access at all locations throughout the Office.

9. In conjunction with the above development, the Office should be progressing to define its requirements for a Portfolio information storage and retrieval system. This implies that any equipment and software obtained for the Library, Registry and MAIS systems must be capable of expansion or upgrading to handle a Portfolio system. Portfolio information is treated by the study as information required at management, planning and operational levels.

10. The Office should immediately commence to prepare an ADP strategic plan which encompasses the early acquisition of equipment to cater for the basic office systems identified. In preparing this plan, the Office would be well advised to engage the services of an expert in information storage and retrieval technology or the office automation area to advise on an appropriate development strategy and the technological alternatives that may be available to meet the Office's needs. The Study understands that the next ADP Strategic Plan should be completed by February 1985 in order that budget provision can be made at least for Library and Registry systems which must be replaced in the 1985/86 financial year.

11. Coupled with any overall strategy for office management and information systems, account should also be taken of the way in which textual material is produced by the Office. Given that the majority of work follows from audit planning to fieldwork and eventual Report production with a lengthy review process, there is scope for applying more efficient means of producing text material.

12. Currently, the Office produces text material on a variety of standard typewriters, memory typewriters, word processing equipment and a trend is developing to also use WP capabilities of recently acquired personal computers. There does not appear to be any strategy towards which the office is working in terms of rationalising and standardising its keyboard services. More importantly, without a strategy which recognises the benefits of storing and accessing (or sharing) textual material, the advantages of word processing/office automation equipment will not be realised in the longer term.

13. As an example, an audit generates a management letter, departmental response, drafting in a Branch Office of a Report paragraph and numerous redrafts of the paragraph in the Branch and Central Office. The amount of re-keying leading to the final Report is considerable and is done on a variety of machines prior to being word processed for the final Report. With the introduction of personal computers with word processing software, the position is becoming further complicated. The personal computers do not have letter quality printers and work produced cannot be transferred in magnetic medium to the central word processing equipment. The Study is aware of report material and other work being input and edited through personal computers and then passed to the WP Pool for complete re-keying after Divisional clearance. This is obviously a waste of scarce keyboard resources.

14. The Study recommends that the Office develop a strategy for word processing. The strategy should be based on:

- (i) Progressive replacement of all typewriters with screen-based word processing facilities.

- (ii) Standardisation of equipment with the capability to transfer textual data from one device to another either automatically or by transfer in magnetic medium.
- (iii) In Central Office, a shared resource system capable of being upgraded to office automation facilities (communication, document filing and indexing, keyword searching, etc).
- (iv) In Branch Offices, stand alone or shared resource units.

15. Depending upon the technical options available that may address the basic requirements identified in the Study papers, it could also be appropriate to include word processing needs or the longer term strategy in any total Office solution. The basic function for all systems is that they are information retrieval systems and not data processing systems. Word processing facilities falls within this general category.

16. The policy of distributing stand alone personal computers may also need to be re-examined in the light of any decision which might be taken to proceed with the acquisition of larger computing facilities for the Office. In this regard any mainframe equipment which provides for distributed access to operational systems operated by the equipment could also provide the facilities normally available on personal computers. Alternatively, personal computers could act as an interface to the main equipment operating either as terminals or as off-line processing devices.

17. Although not within the terms of reference of this study, facilities for audit operational systems (e.g. CAATs) may need to also be considered in any decision to acquire larger computing facilities.

13 JUL 1984

#### Management Control Procedures

Attached are the proposed procedures for management control of DP developments within the AAO. They have been agreed to in principle by the Information Technology Policy Committee, subject to some clarification of some issues.

The proposed procedures have been circulated to AAO Regional Managers for comment. The procedures will be amended following receipt of all comments and issued to all staff as an AAO Administrative Circular.

## DRAFT

DEVELOPING OF COMPUTER BASED SYSTEMS -  
MANAGEMENT CONTROL PROCEDURES

## INTRODUCTION

1. It is the objective of the Office to make use of computers to improve the efficiency and effectiveness of its operations. The Office ADP strategy is aimed at implementing various computer based tools and application systems to effect that improvement. Audit Office staff are already seeing elements of that strategy with the availability of microcomputers for their use.

2. The effectiveness of computer based applications in meeting the objectives of an organisation and the needs of individuals depends on the effectiveness of the control over the development process. This is true whether the application is developed by staff with DP Branch under the auspices of the DP Strategic Plan or by an individual using a generalised software tool made available on microcomputers or mainframes. The purpose of this Administrative Circular is to outline the control that should be applied to various system development activities.

## CONTROL OVER CORPORATE DEVELOPMENT ACTIVITY

3. With the acceptance of the Office's DP Strategic Plan there will be a significant increase in the system development activity undertaken within the AAO. Such an increase will

require revised management control procedures to ensure that DP developments and work load associated with such developments are in accordance with Office priority, that the involvement and needs from various areas of the Office are adequately co-ordinated, and that project progress is monitored and controlled.

4. It is proposed that corporate development be controlled by a two tiered committee structure as follows.

INFORMATION TECHNOLOGY POLICY COMMITTEE (ITPC)

This committee will determine the Office policy, and maintain senior management oversight of activities, in respect of the use of Information Technology in the AAO. This committee will consist of the Auditor-General, Deputy Auditor-General, First Assistant Auditors-General - Divisions A-C and Corporate Management Division. Every 3 months, it will review planned work, resources allocated and progress in implementing plans. The ITPC will guide periodic review of the information technology strategic plan.

INFORMATION TECHNOLOGY CO-ORDINATION COMMITTEE (ITCC)

This committee would be chaired by First Assistant Auditor-General, Corporate Management Division (or AAG DP Branch) and meet as required. This will be at least monthly once significant DP development and implementation occur. It will consist of representatives from Divisions A, B and C plus Regional offices as appropriate and key organisational groups within the Corporate Management

Division - Management Services, PD, Planning Group. The committee will co-ordinate development involvement from various Divisions and Branches and resolve any significant priority or resource conflicts.

5. Planned corporate system development will be in accordance with an approved Information System and Technology (IST) plan. This plan, developed by the Corporate Management Division, will be based on the DP Strategic Plan and agreed to by the ITCC prior to submission to the ITPC. The progress to the plan and variation to the plan will be reviewed 3 monthly by the ITPC. Submissions to both committees will be sought prior to a scheduled meeting.

6. The IST plan will be a rolling programme showing the various application systems to be developed and implemented in the following 12 month period. It will show specifically:

- (i) Planned resource requirements (both DP and User)
- (ii) Planned Implementation schedule and user training requirements
- (iii) Requirements for facilities (equipment, software, commercial accommodation and furniture) to support the development and implementation programme.

7. The IST plan will address all aspects of information system development and information technology acquisition (including acquisition of PABX, Typing and photocopy facilities). Submissions to vary the plan will normally be considered as part

of the 3 monthly review. Changes at other times would be unusual but can be made by the ITCC with later confirmation by the ITPC with prior approval by the Auditor-General or Deputy Auditor-General or FAAG Corporate Management (depending on resource implications) on the basis of a prepared submission.

8. System development will be under the direct control of a Project Leader nominated for the specific project. That project leader will be either a user or DP as considered appropriate and will normally be supported by a Project Steering Committee consisting of appropriate user and DP representatives. The project leader will report on a day to day basis to AAG DP Branch and on a monthly basis to the ITCC.

9. All corporate system development (except some categories of user developed systems, see further paragraph 14) will be in accordance with the guidelines outlined in Attachment A. That approach will allow some variation in the techniques used to determine user requirement (use of prototyping for example) therefore the actual checkpoints and schedule of events will be determined prior to the commencement of the project and agreed to by the ITPC.

#### USER DEVELOPED AND MAINTAINED APPLICATION

10. The IT strategy recognises that as well as corporate systems there will be a need for users to have facilities to develop their own applications. To this end, it is proposed that standard end user software facilities will be provided that will allow users to access corporate information on the mainframe or

to develop simple systems on mainframe or microcomputer. At this time, the standard end user software is available only on the microcomputers and is as follows:

- . Multiplan
- . Multimate
- . PFS file/report

It is intended to review these packages as part of the IT Strategic Plan with other software being made available to access corporate data bases. The packages available will be notified in Audilink.

11. The standard end user software will be selected on the basis that the average end user will be able to use the software with minimal support. Users will be trained in the use of that software with courses being made available on a regular basis or with the provision of self teach packages. A User Support Group has been established within computer services to provide advice and assistance to users in their development of systems. Contact is currently available through the Hotline (062-484800) and any changes to this will be advised in AUDILINK. The work undertaken by that group will normally be on a first come first served basis although, if necessary, conflicts in priority can be referred to the ITCC.

12. The standard end user software is generally appropriate for less complex tasks. Other more advanced software is

available within the Office for the more complex tasks. The software includes:

- . Revelation
- . Microplanner for project planning

Such software would normally be used by staff with better than average DP skills using a system development methodology. It will therefore not be made generally available. The User Support Group should be consulted if there is any doubt as to the appropriateness of the available tools. Depending on the complexity of the application and the priority or benefits to be gained the group may recommend alternatives to developing the application with the standard end user software. Possible courses of action are:

- . arrange for the users involved to be trained in more appropriate software; provide increased support for user development;
- . recommend that the development of the system be included in the IST plan for development as a corporate system;
- . if priority/benefit warrants recommend development by external consultants.

13. Audit staff developing applications whether they be minor spreadsheets or more complex systems using PFS or one of the advanced tools, must take steps to ensure that the application is subject to appropriate verification and testing, that there is

COST EFFECTIVENESS ANALYSIS - OPTIONS 3 AND 5

DEVELOP AND OPERATE PROPOSED SYSTEM - OPTION 3

Price Year '85

OPTION 3 Acquisition of Mainframe 1487188

Price Increase Factors	82/84	81/85	85/86	86/87	87/88	88/89	89/90	90/91	91/92	92/93	93/94	94/95	Price Increase Factors			
													83/84	84/85		
TOTAL														0	0	
2. Recurrent Costs for Development of Proposed System														0	0	
TOTAL														0	0	
3. Capital Costs for Operation of Proposed System														0	0	
3.1 Equipment	-1 Cost to purchase computer hardware and peripherals	0	0	0	1185	1292	870	469	0	0	0	0	0	0	0	0
	-4 Cost to purchase other equipment	0	0	0	50	100	3	0	0	0	0	0	0	0	0	
3.2 Accretion	-1 Cost to construct new buildings to house equipment as in 3.1 above	0	0	0	350	100	0	0	0	0	0	0	0	0	0	
	-2 Cost to alter existing buildings to house equipment as in 3.1 above	0	0	0	60	0	0	0	0	0	0	0	0	0	0	
3.3 Software and Other Costs	-1 Cost to purchase system software	3	0	0	226	559	150	155	160	165	170	175				
	-2 Cost to purchase applications software	3	0	0	50	100	50	50	50	50	50	50	50	50	50	
TOTAL														0	0	
4. Recurrent Costs for Operation of Proposed System		0	0	0	1815	2450	8155	8600	2007	214	221	228	235			
4.1 Equipment and Equipment-based services	-1 Maintenance cost of computer hardware and peripherals	3	0	0	50	163	120	17	153	160	165	170	175	180	185	
	-4 Cost of data transmission services	0	0	0	25	100	150	200	0	0	0	0	0	0	0	
	-10 Cost of using another Agency's computer as a backup	0	0	0	50	100	100	50	0	0	0	0	0	0	0	
4.2 Software	-1 Hire or maintenance of system software	3	0	0	20	110	170	170	175	180	185	190	195	200	205	
4.3 Staff	-3 Cost of application system maintenance staff	3	0	0	220	2100	3100	3100	3333	3167	3200	3230	3265			
4.5 Labour-based Services	-1 Cost of related consultancy services	3	0	0	30	200	300	50	50	50	50	50	50	50	50	
	-3 Other Labour-based services	3	0	0	25	50	50	25	26	27	28	29	30			
4.6 Consumables and Other Costs	-3 Other recurrent costs	0	0	0	50	50	0	50	0	0	0	0	0	0	0	
TOTAL														0	0	
5. Revenue and Residual Items for Proposed System		0	0	0	120	180	260	0	250	250	240	240	240			
TOTAL														0	0	
TOTAL All Proposed System		0	0	120	3760	6114	2725	2350	1753	1800	1882	1916	1927			

DEVELOP AND OPERATE CURRENT SYSTEM

Option 5 Acquisition 1988/89

Price Increase Factors	83/84	84/85	85/86	86/87	87/88	88/89	89/90	90/91	91/92	92/93	93/94	94/95	Price Increase Factors		
													83/84	84/85	
TOTAL														0	0
12. Recurrent Costs for Current System														0	0
TOTAL														0	0
13. Capital Costs for Operation of Current System														0	0
13.1 Equipment	-1 Cost to purchase computer hardware and peripherals	0	0	0	0	710	100	1270	0	0	0	0	0	0	0
	-4 Cost to purchase other equipment	0	0	0	0	50	100	0	0	0	0	0	0	0	
13.2 Accretion	-1 Cost to construct new buildings to house equipment as in 13.1 above	0	0	0	0	0	0	0	0	0	0	0	0	0	
	-2 Cost to alter existing buildings to house equipment as in 13.1 above	0	0	0	0	40	0	0	0	0	0	0	0	0	
13.3 Software and Other Costs	-1 Cost to purchase system software	3	0	0	0	125	200	75	275	232	239	246	253	261	
	-2 Cost to purchase applications software	3	0	0	0	50	100	50	50	50	50	50	50	50	
TOTAL														0	0
14. Recurrent Costs for Operation of Current System		0	0	0	1025	1340	2500	275	281	293	302	311	320		
14.1 Equipment and Equipment-based services	-1 Maintenance cost of computer hardware and peripherals	3	0	0	0	50	75	0	150	155	160	165	170	175	
	-4 Cost of data transmission services	0	0	0	0	25	100	150	200	0	0	0	0	0	
	-10 Cost of using another Agency's computer as a backup	0	0	0	0	50	100	100	50	0	0	0	0	0	
14.2 Software	-1 Hire or maintenance of system software	3	0	0	0	20	50	100	170	175	180	185	190	195	
14.3 Staff	-3 Cost of application system maintenance staff	3	0	0	0	220	1100	1100	1100	1130	1167	1202	1236	1270	
14.5 Labour-based Services	-1 Cost of related consultancy services	3	0	0	0	30	200	300	50	50	50	50	50	50	
	-3 Other Labour-based services	3	0	0	0	25	50	50	25	26	27	28	29	30	
14.6 Consumables and Other Costs	-3 Other recurrent costs	0	0	0	0	50	50	0	50	0	0	0	0	0	
TOTAL														0	0
15. Revenue and Residual Items for Current System		0	0	0	80	160	225	225	175	150	150	140	140	137	
TOTAL														0	0
TOTAL All Current System		0	0	80	2115	4085	5250	2070	1825	1931	1938	1997	2028		

COST EFFECTIVENESS SUMMARY

	Base Year												Totals
	03/81	01/83	05/84	01/87	07/88	06/91	07/90	06/91	01/92	02/93	03/94	04/95	
Total AI	0	0	170	3790	4114	2975	2550	1755	1807	1952	1919	1977	21927
Total AI	0	0	0	0	0	0	0	0	0	0	0	0	0
A. Proposed System Total	0	0	170	3790	4114	2975	2550	1755	1807	1952	1919	1977	21927
B. Current System Total	0	0	89	2925	4085	2600	2970	1825	1881	1938	1997	2058	24149
C. Cumulative Net Cost Difference (A - B)	0	0	-50	-835	-971	375	-200	72	74	74	78	81	722
Discount Rate = 10%													
Discount Factors	1.21	1.1	0	0.7991	0.6216	0.4793	0.3603	0.2709	0.2045	0.1537	0.1165	0.0881	
D. Discounted Costs Option A	0	0	150	3445	4161	2155	1695	1080	1020	956	975	928	18226
E. Discounted Costs Option B	0	0	80	2650	3376	3182	1811	1133	1862	915	932	875	18157
F. Annual Discounted Cost Difference (E - D)	0	0	-50	-785	-485	104	-181	45	82	39	57	55	261
G. Cumulative Discounted Cost Difference (F's aggregated)	0	0	-50	-845	-1530	234	83	108	150	185	226	281	761
H. Discounted Cost Ratio (G Total E / Total D)													
													1.0160254

APPENDIX 3

Public Accounts Committee letter of  
2 April 1986 to Australian Audit Office  
requesting further information



COMMONWEALTH OF AUSTRALIA  
JOINT PARLIAMENTARY COMMITTEE OF PUBLIC ACCOUNTS

PARLIAMENT HOUSE  
CANBERRA, A.C.T.  
TEL. 72 7455  
TELEX AA61669  
FAX 727689

The Auditor-General  
Silverton Centre  
CANBERRA ACT 2600

Attention: Mr Max Shannahan

COMPUTER ACQUISITION PROPOSAL BY AAO

My purpose in writing is to seek further information on aspects of Audit's computer acquisition proposal and to confirm arrangements for a public hearing on 17 April.

Further Information

The secretariat has examined the Australian Audit Office's submission of 26 February 1986 and selected background documents sent to us on 6 March 1986. The submission and supporting documents have also been referred to a consultant. I attach his report on your proposal, for your information and response. Our requests for further information are cross referenced where applicable to the consultant's report. It would be highly desirable to have your responses to the consultant's comments and answers to the other matters raised below by not later than 10 April 1986 to allow the Committee to review your response before the hearing.

The main issues/questions that the Committee wishes to resolve on the basis of the consultant's report and secretariat's review of your submission, are:

1. IBM compatible mainframe. (p1,3 Attach A p8-10)

(a) Is it necessary to restrict the field in this way? On one hand this group itself is not homogeneous, and on the other hand other major computer manufacturers can provide software interfaces which permit the transfer of data from IBM to other machines.

(b) As referred to in your submission (Section 13.2) has AAO lodged further information in support of a C of E with DOLGAS? Please supply copies of relevant documentation.

DOLGAS's views on this issue have also been sought.

2. Industrial Issues (p3)

The submission states that no job impact study has been undertaken but that it is not expected that there will be any staff losses. The same section indicates that staff in audit areas 'appear to consider that the proposal is essential for the performance of their duties'.... and 'the proposal aims at providing all Audit staff with access to modern computing facilities 5 years from commencement of the project'.

(a) Given the pervasive impact of computing on AAO's operations, how can Audit justify not having conducted any job impact study which would explore the changes likely to occur in work patterns, organisation and the work environment?

(b) What action has been taken to initiate a job impact study in consultation with users; have terms of reference been agreed and when will results be available?

(c) Could you please provide details of the project management and user consultation groups in place and their responsibilities and activities to date?

(d) What staffing provision has been made for user training and support and what are the basic elements of your user training program?

3. Costing (p2, Attachment A p1,2 and 3)

(a) How does AAO respond to the consultant's comments at pages 2 and 3 of Attachment A regarding costing, particularly (d)?

(b) With regard to absorbed cost estimates, please inform the Committee of the basis for both non-staff and staff absorbed cost calculations.

(c) Please also provide details of the classifications and expected duties of the additional staff required.

4. Technical Aspects (p2-5 and Attachment A p2-9, p10)

In view of the concerns referred to at page 2 of the consultant's report, could you provide the Committee with further information on

- (a) equipment sizing
- (b) system architecture
- (c) network topology
- (d) clarification of the capacities of Austpac



Please provide information on:

(a) Software compatability across mainframes and microcomputers in the network: Please demonstrate that the strategy is feasible using particular offerings and products at hand.

(b) Integration: How does AAO propose to ensure that offerings selected are compatible and that new technology will fit in with the standards established.

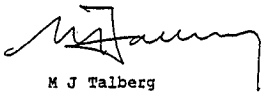
(c) Capacity planning: Information provided on this item is quite general. How and when do you propose to refine your estimates of requirements - in the light of comments at p.5 of consultant's report where he urges consideration of the number of active network terminals likely to be linked to the central system during peak operations and broad disk and processing capacity planning?

(d) Networks: What consideration has been given to future linking of the Audit office network to auditee networks? What impact is this likely to have on the current proposal?

#### Arrangements for Hearing

Further to my discussions with the Auditor-General I wish to confirm that a public hearing will be held from 3.30 pm to 6.30pm in House of Representatives Committee Room No.4 on 17 April 1986. Could you please provide the full names and designations of all officers who will be appearing as witnesses.

If you have any questions regarding these arrangements, please phone Anne Cronin on 727455.



M J Talberg  
Secretary  
2 April 1986

#### APPENDIX 4

Public Accounts Committee letter of  
4 April 1986 to Department of Local  
Government and Administrative Services



COMMONWEALTH OF AUSTRALIA  
JOINT PARLIAMENTARY COMMITTEE OF PUBLIC ACCOUNTS

PARLIAMENT HOUSE  
CANBERRA, A.C.T.  
TEL. 72 7455  
TELEX AA61689  
FAX 727689

The Secretary  
Department of Local Government  
and Administrative Services  
Administrative Building  
PARKES ACT 2600

Attention: Mr Ruby

AUSTRALIAN AUDIT OFFICE COMPUTER ACQUISITION

On 17 January 1986 the Committee was asked to consider a proposed computer acquisition by the Australian Audit Office (AAO). The Committee has scrutinised the material tendered and proposes to conduct a public hearing on 17 April on the matter. My purpose in writing is to invite your Department to provide a submission and witnesses for this hearing.

I have attached a copy of the submission AAO made to the Committee on their proposal. You will note that DOLGAS's co-ordination comments on their Cabinet submission are reproduced there. Also attached is a report on the submission from a consultant to the Committee.

To further assist you in your preparation for the hearing, set out below are several issues which have emerged from the documentation to date on which the Committee would appreciate your comment.

1. IBM Compatible Mainframe (AAO) submission, ADP Strategic Plan 5.2.5 and Consultant's Report, p.1, 3, Attachment A p.8).

AAO argue that an IBM compatible mainframe is needed to facilitate the use of audit software on auditees, the transferral of data from auditees to the central site and to provide staff with the experience of an IBM environment.

AAO submit (p23) that a request for a Certificate of Exemption (C of E) for the restriction of tenders to an IBM compatible mainframe was being prepared and was to be forwarded to DOLGAS in the near future.

On the basis of the arguments tendered in this submission and any other information provided by AAO directly to DOLGAS, would DOLGAS grant of C of E for an IBM compatible limited tender? Why? How does DOLGAS respond to the consultant's comments.

2. Single supplier preference/integration (AAO submission p22 Consultant's report p2,3 and Attachment A pages 2-7 )

The AAO proposal contains a large number of technological components. To the extent that AAO wish to stimulate local software and communications firms to respond to the RFT, there is a significant task to ensure that the various components harmonise and also permit innovation as technology advances. This suggests that if AAO are not to devote a considerable amount of time and effort evaluating and co-ordinating disparate offers, that there will need to be co-ordination of offerings of part tenderers.

(a) What is DOLGAS's attitude to part tenderers prime contracting, particularly as regards purchasing efficiency, in view of the consultant's comments on suppliers?

(b) What steps will DOLGAS take to ensure that AAO has an overall technical architectural framework which will define the standards and interconnection rules for all elements of the proposal and provide flexibility for the future?

3. Accommodation (Attachment D of AAO's submission)

DOLGAS's co-ordination comments refer to accommodation constraints. What action has DOLGAS taken, and what does it propose to ensure that there is appropriate accommodation available for this computer facility?

Is there any attempt to anticipate accommodation requirements for major computer purchases in advance of cabinet approval? If so, what is done?

4. Evaluation Methodology

The Committee understands that AAO has proposed an evaluation methodology which does not conform to DOLGAS's standard form, and that discussions have been conducted on the matter. What is DOLGAS's attitude to this particular case and does it envisage that it may affect the development and application of other Department's evaluation methodologies?

I would appreciate your responses to these questions and advice on officers attending the public hearing by 9 April 1986.

If you have any questions please contact Anne Cronin on 727455.

*A. Cronin*

M J Talberg  
Secretary  
4 April 1986



DEPARTMENT OF LOCAL GOVERNMENT AND ADMINISTRATIVE SERVICES

86/1160  
Purchasing and Disposals  
Division

GPO Box 1920  
CANBERRA ACT 2601

9 April 1986

Mr M. J. Talberg  
Secretary  
Joint Parliamentary Committee  
of Public Accounts  
Parliament House  
CANBERRA ACT 2601

**AUSTRALIAN AUDIT OFFICE COMPUTER ACQUISITION**

Thank you for your letter of 4 April 1986 inviting DOLGAS to provide a submission by 9 April 1986 and witnesses for the hearing on 17 April 1986.

Comments on specific issues you have raised:

**1. IBM Compatible Mainframe**

We note your consultant's observations that based on the AAO Submission to the Committee there is insufficient justification for restricting to IBM or IBM compatible mainframe equipment. Our concerns in this regard have been drawn to the attention of AAO in a letter dated 3 April 1986, a copy of which is attached. Further comments from AAO on this aspect have been received which include a request for a Certificate of Exemption to restrict to IBM compatible equipment for that element of the acquisition relating to the central computing facilities. The network, including the Central Office Mode, and associated peripherals and software would then be acquired by Public Tender. The DOLGAS co-ordination comments state a preference to invite a single public tender embodying a phased approach to the acquisition, thus providing maximum opportunity for local industry to participate.

There is no need to issue a Certificate of Exemption in order to facilitate the acquisition of IBM compatible equipment. DOLGAS has, on a number of occasions in the past, invited public tenders for IBM compatible equipment provided sound and publicly defensible grounds existed (such as compatibility with existing systems acquired as a result of a public tender originally).

**APPENDIX 5**

Department of Local Government and  
Administrative Services - Submission of  
9 April 1986

The question then becomes whether the grounds advanced in favour of IBM compatibility by AAO are valid. DOLGAS consideration of these issues must be based on the proposition that it is AAO's prerogative to define its requirements in accordance with its strategic direction. However the AAO does acknowledge that not all of its problems would be overcome by the selection of IBM compatible equipment. Also your consultant points out that even the introduction of an IBM compatible central mainframe would not overcome the incompatibilities of the operating system variations evident within the claimed 60% (AAO now advise 46%) of auditees operating IBM or compatible systems.

The AAO makes reference to computer assisted audit techniques as supporting the need for IBM compatibility, however no statement is made that these techniques, including standard interfaces, can be implemented only on IBM compatible equipment. Also, the transferring of data either by magnetic tape or network to and from the auditee's site and the AAO would be possible even with a non IBM or compatible mainframe due to technological advances in computer communications.

The AAO has provided information that the IBM compatible environment is predominant amongst auditees, and its staff need familiarisation with these systems. This strategy has some merit in terms of standardisation within AAO, but technically it does not appear to be essential to AAO operations.

On purely technical grounds therefore the IBM compatibility argument could be defensible only as a desirable requirement.

## 2. Single Supplier Preference / Integration

(a) DOLGAS would not wish to discourage the submission of part tenders as this is the area where local manufacturers have the greatest potential. Nevertheless, as pointed out by your consultant, there are a number of advantages in selecting a "dominant supplier" capable of dictating the standards across most aspects of the AAO architecture. This supplier need not necessarily be a major hardware supplier, as there are a number of software suppliers in Australia capable of co-ordinating a large number of technological components.

Part tenders can be accommodated in several ways, the preferred mechanism in terms of purchasing efficiency would be as sub-contractors to a prime contractor who would be required to assume overall responsibility for their activities.

(b) Steps to ensure AAO has an overall technical architecture framework which will define the standards and interconnection rules for all elements of the proposal and provide flexibility in the future:

The final system architecture would only be known after the final selection of the system. At this stage it may only be possible to get a sketch of the system architecture that AAO wish to implement. By leaving it open at the RFT stage, AAO may be able to consider viable alternative architectures.

The overall systems requirements should be broken up into more or less independent sub-systems with clearly defined interfaces with the other sub-systems. This may be achieved by specifying standard interfaces and protocols which although varied, as pointed out by your consultant nevertheless provide a basis of achieving compatibility.

This would enable the grouping and consideration of various part-tenders and architectures during the tender evaluation phase. Once a decision was made and a system was acquired, it would limit the extent of flexibility in future growth. Options offering the greatest flexibility in growth in the future may be awarded suitable credits during evaluation. Irrespective of the final selection, we consider that certain industry standard interfaces are highly desirable and adequate credits should be awarded to them. These would be the subject of discussions with the AAO as their Evaluation Methodology and RFT specifications are developed. In the specification the Commonwealth can require the adoption of particular industry standards for communication and/or interconnection to ensure that the AAO's objective of obtaining compatible equipment can be met.

For the purpose of evaluation, groupings of part-tenders or sub-systems would be done on the basis of compatibility. Where possible the sub-systems would be evaluated against similar items where one subsystem has the ability to replace another, otherwise sub-systems groupings which are functionally equivalent would be compared with each other to ascertain the most cost-effective solution.

## 3. Accommodation

The questions raised will be answered in writing by the Property Directorate which has the responsibility to arrange for accommodation.

## 4. Evaluation Methodology

The matter of evaluation methodology which does not conform with those contained in the "Guidelines for ADP Acquisitions" has been taken up directly with the AAO. We are concerned that a number of principles underlying the Commonwealth's methodologies in such areas as treatment of mandatory requirements, scoring of desirable attributes and the avoidance of subjectivity wherever possible, are being ignored. It is our view that the present shortcomings can be overcome in further discussions with the AAO.

We do not envisage that this particular case may effect the development and application of other Departments' evaluation methodologies.

The DOLGAS Purchasing and Disposals Division representative at the public hearing will be Mr R.D Rubie, Assistant Secretary, Major Purchasing Branch.

*R.D Rubie*  
(R.D Rubie)  
for First Assistant Secretary



COMMONWEALTH OF AUSTRALIA  
AUSTRALIAN AUDIT OFFICE

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Please refer P86/37

APPENDIX 6

Australian Audit Office Supplementary  
Submission of 10 April 1986

Secretary  
Joint Parliamentary Committee of Public Accounts  
Parliament House  
CANBERRA. A.C.T.

COMPUTER ACQUISITION PROPOSAL BY THE AAO

1. The attached information is provided in response to your letter of 2 April requesting further information on the Australian Audit Office's Computing proposal.
2. Also attached is a copy of the case forwarded to DOLGAS requesting the issue of a Certificate of Exemption to restrict the central mainframe to an IBM compatible environment.
3. As you are aware, we have engaged Mr David Angeloro, of David Angeloro and Associates, as a consultant to review the DP Strategic Plan and to assist with the development of our RFT. We have attached a copy of his initial report together with copies of papers developed on the RFT strategy and the evaluation model. These papers were informally given to the secretariat staff at the briefing on 2 April. Mr Angeloro's reports have not yet been fully assessed by the AAO.
4. The information contained in sections 3(a), 4.1 and Attachments H and I should be treated as "commercial-in-confidence".
5. The AAO witnesses attending the public hearing are as follows:

John Vincent Monaghan	Auditor-General
Brian Tracey Kimball	Acting First Assistant Auditor-General, Corporate Management Division
Maxwell James Shanahan	Assistant Auditor-General, DP Branch
Bruce Alexander Rossell	Director, Computer Services
David James Angeloro	Consulting Director, David Angeloro & Associates

8. For further information associated with the AAO Computer Acquisition proposal please contact either myself on 484810 or Bruce Rossell, Director Computer Services, on 484805.

M. J. Shanahan  
Assistant Auditor-General  
DP Branch  
10 April 1986

## LIST OF ATTACHMENTS

## AAO RESPONSE TO JCPA REQUEST FOR FURTHER INFORMATION

## Attachments

- A Draft Administrative Circular - "Development of Computer based Systems - Management Control Procedures"
- B Action items arising out of the Information Technology Policy Committee meeting of 19 February 1986
- C Revised Costing
- D Draft Workload Estimates
- E Allocation of Workstations and Costing
- F Staffing
- G Logical Network Topology
- H Withheld - "Commercial-in-Confidence"
- I Withheld - "Commercial-in-Confidence"

## LETTER TO DOLGAS RE CERTIFICATE OF EXEMPTION

## CONSULTANTS REPORTS - DAVID ANGELO &amp; ASSOCIATES

- Review of ADP Strategic Plan
- RFT Strategy
- Sample RFT Section - Data & Resource Access Control System
- RFT Evaluation Methodology

1. IBM Compatible Mainframe (p1,3 Attachment A p8-10)
- (a) The case for an IBM compatible central mainframe revolves around the general strategic direction considered most appropriate to the overall requirements and future directions of the AAO. This case is outlined in detail in the attached letter to DOLGAS.
- (b) A copy of the case submitted to DOLGAS requesting the Certification of Exemption is attached.

2. Industrial Issues (p3)

The initial development of the AAO's DP Strategic Plan was undertaken by a 3-man Senior Executive Group consisting of both DP and Users. That group consulted widely within the Office, seeking the views of Users. Its activities and reports were oversights by a DP Management Committee. Copies of the conclusions of that study were widely distributed throughout the AAO.

Since the development of the Strategy, action has been taken to determine the ongoing procedures for the management and control of the DP developments. Those procedures, outlined in an draft Administrative Circular at Attachment A, propose a two level committee structure. These committees are:

- the Information Technology Policy Committee (ITPC), and
- the Information Technology Co-ordinating Committee (ITCC).

The ITPC met for the first time on 19 February 1986. A record of the decisions made at this meeting at Attachment B.

The ITCC has yet to meet. It was decided to delay the initial meeting of that Committee until early May since many of the Committee have been involved in preparing for the International Congress of Supreme Audit Institutions (XII INCOSAI) being hosted by the AAO in Sydney from 7-16 April 1986.

Action is in train to brief staff generally on the DP Strategic Plan and its implications. Briefings have been given to -

Queensland Regional Office	26 February 1986
N.S.W. Regional Office	27 February 1986
Victoria Regional Office	5 March 1986
Tasmania Regional Office	6 March 1986

Presentations to staff in Central Office and other Regions have been postponed until after the INCOSAI conference and are currently scheduled for May 1986.

Workplace delegates, as well as Unions, have been provided with a copy of the DP Strategic Plan. Workplace delegates in the ACT were specifically briefed in December 1985. As yet the procedures for ongoing staff consultation have not been determined. The Office will seek to establish such arrangements through the National Consultative Council.

With regard to the specific points raised, the following comments are relevant.

- (a) The benefit of undertaking a job impact study at this is not evident. It is clear, however, that there will be no job losses as a result of the implementation of the proposed facilities. The major systems proposed in the DP Strategic Plan, e.g., the Auditee Portfolio and Office Precedent systems, do not currently exist in any computerised or structured manual form and are only in the earliest stages of planning

In general, the major impact of the introduction of computing facilities will be on professional audit staff. To a large extent the proposed facilities will be an extension of the change already experienced by audit staff who are encountering computer facilities in their audit work. Professional AAO staff have already responded positively to the limited introduction of microcomputers and CAAT facilities within the office and are pressing for the introduction of additional computing facilities.

It is the AAO view that the consideration of effects on audit staff of changes as the result of the computer acquisition will be an ongoing process to be dealt with as part of the development and implementation of particular systems.

Other than auditors the group most impacted by the introduction of the proposed facilities are the 25 keyboard staff within the AAO. Such staff already use either wordprocessing facilities or text editors. Steps have been taken to trial the use by a secretary of an IBM PC as a word processing device attached to a local area network. A report which relates to this experience is being drafted and will recommend the further involvement of keyboard staff in determining how any extension of the use of such facilities should be approached.

Administrative staff will also be impacted by the introduction of new systems but the introduction of such systems is somewhat distant. The effects on such staff will be considered during systems planning and implementation.

- (b) No action has been taken as yet. One of the terms of reference for the ITCC is to co-ordinate staff consultation on technological change. This issue will be considered at the first meeting of the ITCC to be held late April or early May 1986. Also to be considered at that meeting will be a proposal for Workplace delegate representation on the Committee.

- (c) Procedures for the development of computer systems, including the project management requirements, are outlined in the document "Development of Computer based System - Management Control Procedures" at Attachment A.

At the completion of the INCOSAI conference a special task force of users (non-DP staff) is to be constituted to develop further the user requirements for the Auditee Portfolio and Office Precedent systems. In addition, a special Information Management Section is proposed to be established in the Corporate Management Division to take responsibility for the functional specification and user acceptance of all systems.

- (d) The AAO already has a substantial ongoing investment in user training, for both professional accountants and DP specialists, and is supported by a separate Professional Development Section located outside DP Branch. This Section has a professional DP trainer (CS03).

The staffing provisions for user support include a CS03 each in ACT, NSW and Victoria regions. In addition, three additional user support staff (non-CSO staff) have been included in the revised AOSL cover and will be located in the new Information Management Section.

In general it is proposed that computing facilities will be further introduced to user staff in three steps:

- |                            |   |
|----------------------------|---|
| (i) Base Level Training    | This will be the initial training given to audit staff once a workstation (computer terminal) is implemented. It will include training in the user interface facility and basic personal support tools. |
| (ii) Access Level Training | This will be undertaken once each workstation is connected to the network. Users will be shown how to access application systems on the network and central facility.                                   |
| (iii) Application Training | For each application users will be introduced to the new application as part of the application implementation program.   |

The additional application training will be undertaken by the development team and co-ordinated in the Information Management Section.

The AAO will be seeking, in the RFT, assistance and strategies for the introduction of the first elements of new technology. It will be also seeking Computer Aided training facilities to cope with continuing training. The AAO's overall future ADP training strategy cannot be determined until after the various tenders have been evaluated.



## 3. COSTING (p2, Attachment A pl, 2 and 3)

- (a) The costing figures provided in the submission to the JCPA were extracted from the Cabinet Submission. As such, they attempted to identify the total costs of the project over the period and then indicate what components would be absorbed within existing expenditure and resources. The attempt to include absorbed costs has created some confusion, both within this Office and with coordinating agencies. Therefore, the revised costing detailed at Attachment C does not attempt to absorb any costs but has been broken down into more detailed components to allow for comment on the basis of the cost estimates.

With regard to the specific concerns raised by the consultant on page 2 of Attachment A the following comments are provided.

(1)

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The AAO agrees with the suggestions contained in the consultants response to Question 15 (page 5) and has been using a similar approach in refining the workload estimates. Attachment D is a current draft of the workload estimates and this is being progressively refined in order to give the vendors as much information as possible. Discussions with vendors to-date indicate that our indicative equipment sizing used for the cost estimates is in accordance with our anticipated workload estimates.

- (11) The question of a network topology is addressed in response to the next section, "Technical Aspects" ..... (withheld - "Commercial-in-Confidence") ..... A detailed breakdown of the number of various types of workstations and network nodes is at Attachment E.
- (111) As a result of further discussions with vendors the AAO is not convinced that Austpac provides the best solution. This approach was recommended by Telecom where an alternative service was not clearly justified.

The approach in the RFT will be to detail the anticipated network traffic volumes between each node in the system. Each vendor will then be required to include the costs of the Telecom services that best suit the solution being offered. In some cases Austpac may be offered. However, it is unlikely that the major links between Canberra and the larger States will be through Austpac.

- (iv) The \$40,000 CSIRONET expenditure for CAATs was the initial estimate for this financial year. It has since been revised and the current expected expenditure to the end of June is \$74,000. The absorbed costs totalling \$1.1 million reflect the planned significant future increase in the use of CAATs. This increase has already required almost doubling of this years estimate and it is expected that expenditure next year and in subsequent years will be in the order of the estimated \$1.1 million if the AAO continues to use CSIRONET.

These costs were absorbed as a specific item as the use of CAATs was not directly related to this acquisition proposal, i.e., if the acquisition does not occur then the Office will be committed to an increasing CSIRONET expenditure associated with the use of CAATs. The attached revised costing does not attempt to absorb any of these costs but details the the significant increase in CSIRONET expenditure next financial year, part of which is the increased use of CAATs.

- (b) This item has been covered in the above discussion on the original cost estimates and the revised cost estimates.

- (c) An establishment proposal has been approved to cover most of the expected increase in staff. Since this was prepared there have been some minor changes, including an additional increase in AOSL of 3 to cover additional user support staff (non-CSO staff) in Canberra. The original AOSL increase in the Cabinet Submission included a CSO3 to provide user support in each of the ACT, NSW and Victoria regional offices.

Attachment F summarises the expected establishment at the end of 1987/88.

4. TECHNICAL ASPECTS (p2-5 and Attachment A p2-9, p10)

- (a) Equipment sizing has been addressed in response to the previous section. Attachment D is a draft of the current workload estimates, which gives an indication of the type of information being prepared for inclusion in the RFT. As indicated, this draft is currently being refined.
- (b) We are in total agreement with the comments of the consultant on the "Technical Systems Architecture" (Attachment A p2-6). However, these comments do not take account of the practical implications of specifying an architecture in relation to the DOLGAS guidelines. To fully specify an architecture would effectively limit the responses to a specific vendor. For example, simply specifying that the architecture must conform to the ISO OSI model would not achieve any guarantee that different vendors devices could be connected as most vendors claim some level of compliance. In our opinion, the "guarantee" of connectivity and integrity comes from restricting the supply of the network to a "Prime Vendor" that has an architecture based on an well accepted industry standard. We intend to include in our RFT similar criteria to that detailed by the consultant on page 5 and 6 of Attachment A.

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In accordance with the general comments of the consultant, we intend to make the supply of the basic network and processors the responsibility of a "Prime Vendor". The AAO is not willing to compromise the basic integrity of the network by allowing part tenders, however, in conforming with the Australian industry participation guidelines the AAO will allow part tenders for workstations and other peripherals. This is consistent with the AAO briefings to AIIA and ACEMA members where the desire for the "Prime Vendor" to come in with a consolidated bid, including the required Australian content, was stressed.

- (c) The network topology cannot be determined except through the tender evaluation. Our preferred logical network topology has been included in our briefings to AIIA and ACEMA members and is included as Attachment G. There are many different solutions that could meet our functional requirements and to specify the topology in more detail would restrict the number of potential vendors.
- (d) This issue is addressed in section 3(a)(iii).

4.1. Software Compatibility

The overall strategy has been extensively discussed with a large number of specific vendors. In addition, the strategy has been outlined to industry as part of our briefing to AIIA and ACEMA members. We are confident that it is achievable and will require in the RFT that the compatibility across the network is demonstrable.

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#### 4.2. Integration

The integration problem has been addressed in the previous coverage of the "Systems Architecture". In brief, the "Prime Vendor" requirement give the best assurance of compatibility.

With regard to new technology, the requirement for the network to be based on a well established industry standard leads to long term flexibility. There is obviously no guarantee that the selected vendor will embrace all new technology. However, given that the AAO intends following the basic criteria for the selection of the network vendor as outlined by the consultant on pages 5 to 6 of Attachment A, then there is reasonable assurance that future technology will fit into the architecture.

#### 4.3. Capacity Planning

The suggestion of the consultant (page 5, Question 15) reflects the way in which the Office is already refining its workload estimates. A copy of the current draft is at Attachment D. As indicated by the consultant the Office is having some difficulty with the workload estimates. This is primarily due to the fact that most of the proposed systems do not currently exist as either a formal manual system or as a computerised system and, therefore, there is no base of existing data to support the estimates. Despite this, the Office is continuing to derive considered estimates of anticipated workloads, storage volumes and network traffic volumes.

#### 4.4. Networks

The future linking to auditee networks, through SNI or other means, is currently not envisaged as a likely option. However, it obviously is part of the long term flexibility that the Office is seeking, especially to respond to changing circumstances and audit requirements. The main problem with such a link would be the reluctance of most auditees to have to consider the requirements when changing their systems or their network.

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DEVELOPING OF COMPUTER-BASED SYSTEMS -  
MANAGEMENT CONTROL PROCEDURES

## INTRODUCTION

1. It is the objective of the Office to make use of computers to improve the efficiency and effectiveness of its operations. The AAO's ADP Strategic Plan proposes that the office take steps to acquiring its own computing facilities and to develop or acquire a range of application systems. The plan is now endorsed by the Government subject to the JCPA review of the strategy. The Office ADP strategy is aimed at implementing various computer based tools and application systems to effect that improvement. Audit Office staff are already experiencing elements of that strategy with the availability of microcomputers for their use.

2. The effectiveness of computer based applications in meeting the objectives of an organisation and the needs of individuals depends on the effectiveness of the development process and this in turn is affected by the effectiveness of control over that process. This is true whether the application is developed by staff of the DP Branch under the auspices of the DP Strategic Plan or by an Officer of another area using a generalised software tool to develop applications to assist in the audit task. The purpose of this Administrative Circular is to outline the control that should be applied to the various system development activities.

## CONTROL OVER CORPORATE DEVELOPMENT ACTIVITY

3. With the acceptance of the Office's DP Strategic Plan there will be a significant increase in the system development activity undertaken within the AAO. Such an increase will require revised management control procedures to ensure that the DP developments proposed and workload associated with such developments are in accordance with Office priority, that there is adequate involvement of users in the development, that project progress is monitored and controlled, and that the developed systems meet user objectives and needs.

4. Corporate development will be controlled by a two tiered committee structure as follows.

INFORMATION TECHNOLOGY POLICY COMMITTEE (ITPC)

The ITPC will determine the Office policy, and maintain senior management oversight of activities, in respect of the use of Information Technology in the AAO. The committee will consist of the Auditor-General, Deputy Auditor-General, First Assistant Auditors-General, Divisions A-C and Corporate Management Division, and Assistant Auditor-General DP Branch. Every 3 months, it will reassess priorities and review the work planned, resources allocated and progress in implementing plans. The ITPC will guide periodic review of the information technology strategic plan.

INFORMATION TECHNOLOGY CO-ORDINATION COMMITTEE (ITCC)

The ITCC will be chaired by First Assistant Auditor-General, Corporate Management Division and meet as required. This will be at least monthly once significant DP development and implementation occur. It will consist of representatives from Divisions A, B and C plus one Regional Office Manager and the Assistant Auditor-General from DP Branch and Resource Management and Development Branch of the Corporate Management Division. The ITCC will co-ordinate development involvement of various Divisions and Branches and resolve any significant priority or resource conflicts.

5. Planned corporate system development will be in accordance with an approved Information System programme (ISP). This program, developed by the Corporate Management Division, will be based on the DP Strategic Plan and agreed to by the ITCC prior to submission to the ITPC. The progress to the plan and variation to the plan will be reviewed 3 monthly by the ITPC. Submissions to both committees will be sought prior to a scheduled ITPC meeting.

6. The ISP will be a rolling program showing the various application systems to be developed and implemented in the following 12 month period and how the resources will be co-ordinated to meet objectives and milestones. It will show specifically :

- (i) Planned resource requirements (both DP and User)
- (ii) Planned Implementation schedule and user training requirements
- (iii) Requirements for facilities (equipment, software, commercial accommodation and furniture) to support the development and implementation program.

7. The ISP will address all aspects of information system development and information technology acquisition (including acquisition of PABX, Telex, Vocadex, typing and photocopy facilities). Submissions to vary the plan will normally be considered as part of the 3 monthly review. Changes at other times can be made by the ITCC with later confirmation by the ITCC with prior approval by the Auditor-General or Deputy Auditor-General or First Assistant Auditor-General Corporate Management (depending on resource implications) on the basis of a prepared submission.

8. All corporate systems development (except some categories of user developed systems (see further paragraph 14), will be in accordance with the guidelines outlined in Attachment A. That approach will allow some variation in the techniques used to determine user requirement (use of prototyping for example) therefore the actual checkpoints and schedule of events will be determined prior to the commencement of the project and agreed to by the ITCC.

9. For reasonably sized systems, system development will be under the direct control of a Project Leader nominated for the specific project. That Project Leader will be either a 'user' or a DP specialist as considered appropriate and will normally be supported by a Project Steering Committee consisting of appropriate user and DP representatives. The project leader will be responsible to Assistant Auditor-General DP Branch although reporting monthly to the ITCC.

#### USER DEVELOPED AND MAINTAINED APPLICATION

10. The Information Technology strategy recognises that apart from corporate systems, there will be a need for users to have facilities to develop their own applications. To this end, standard end-user software facilities will be provided that will allow users to access corporate information on the mainframe or to develop simple systems on mainframe or microcomputer. At this time, the standard end-user software is available only on the microcomputers and is as follows :

- . Multiplan
- . Multimate
- . BFS File/Report

The range of software available will be extended as part of the proposed acquisition of additional facilities as proposed in the AAO's DP Strategic Plan. It is intended to review whether other packages, such as project management packages, should be made available in the interim. However, such packages are expensive, and since it is likely that different software will be acquired under the DP Strategic Plan, it will be necessary to place some limits on the additional software acquired. Any reasonable case will be considered, however, and should be forwarded to the Assistant Auditor-General DP Branch. The packages that are available will be notified in AUDILINK.

11. The standard end-user software will be selected on the basis that the average end-user will be able to use the software with minimal support. Users will be trained in the use of that software with courses being made available on a regular basis or with the provision of self teach packages. A User Support Centre has been established within DP Branch to provide advice and assistance to users in their development of systems. Contact is currently available through the Hotline (062-484800) and any changes to this will be advised in AUDILINK. The work undertaken by that centre will normally be on a first come first served basis although, if necessary, conflicts in priority can be referred to the ITCC.

12. The standard end-user software is expected to be generally appropriate for less complex tasks. Other more advanced software is available within the Office for the more complex tasks. The software includes :

- . Revelation
- . COBOL Computer

Such software would normally be used by staff with better than average DP skills using a system development methodology. It will therefore not be made generally available. The User Support Centre should be consulted if there is any doubt as to the appropriateness of the available tools. Depending on the complexity of the application and the priority or benefits to be gained, the centre may recommend alternatives to developing the application with the standard end-user software. Possible courses of action are :

- . arrange for the users involved to be trained in more appropriate software; provide increased support for user development ;
- . recommend that the development of the system be included in the ISP for development as a corporate system ;

if priority/benefit warrants recommend development by external consultants.

13. Audit staff developing applications whether they be minor spreadsheets or more complex systems using PFS or one of the advanced tools, must take steps to ensure that the application is subject to appropriate verification and testing, that there is supporting evidence to verify the results and that, where appropriate, there is adequate documentation and procedures so that the application can be run at a later time. They must also ensure that they 'back-up' data and software files when developing applications.

14. One problem that users face is how to decide what control procedures are appropriate in different circumstances. To assist in that decision, three classes of user system development are defined, each of which require a different control procedure. These are :

#### CLASS A

This class includes the once-off application development which has no continuing significance to the organisation developed by user staff using standard end-users software.

It is typically a small spreadsheet or PFS application system developed by an end user which will be used once only, or easily understood or redeveloped by any other end-user staff. It is sometimes referred to as Personal Computing in that a single user tends to be responsible for the development and use of the application. Staff are to apply the following minimum control requirements :

- . Results should be verified and signed off by the developer and by an appropriate second party if the results are significant to an audit or a management decision ;
- . Procedures and data are to be printed and filed (either in working papers or in an administrative file) to support the conclusions reached.

#### CLASS B

This class includes the more complex applications developed by users within Divisions and Regional Offices using the standard end-user computing software that will be subject to continuing use within the organisation or will have to be run by different staff at a later time. Such applications should be subject to the following management control procedures :

Division or Regional Office management approval for development to be given after consideration of development time and prospective benefits ;

. Results to be verified and that verification checked and signed off by an appropriate second party ;

. Procedures for use of the application to be documented so that the application can be re-run or changed by other users;

. Various runs to be printed and filed to support the results of the application and conclusions based on these results ;

. An application registration form (copy attached, Appendix B) should be completed and a copy passed to the User Support Centre. This is to ensure that the Office has an inventory of significant applications developed by Office staff.

#### CLASS C

This class comprises corporate systems development including systems developed by end-users with User Support Centre assistance. A user developed system will be declared a corporate system because either :

- . the application of data is of general use to a number of different users; or
- . the complexity of system requires a rigorous development approach; or
- . the effort in developing the system is of significance.

Such systems must be subject to the standard system development process (see Attachment A) to ensure that they meet various users needs and can be maintained in the future. The development of such a system will require the approval of the ITCC on the basis of a System Proposal. The User Support Centre will assist users to prepare such a proposal.

15. The difficulties in classifying user developed applications are recognised. The criteria for classifying applications is not precise and it is expected that Audit staff should use their professional judgment and, where appropriate, consult with their management and the User Support Centre. In the main most audit related applications will be Class A or B. Approval to commence the development will be part of the normal management control of audit activities. The procedures are intended to facilitate the use of Technology by Audit Staff not to restrict their use. Audit Staff and Audit Management should however recognise the risk involved with any development and that the risk increases as the complexity and/or importance of the application increases, and should ensure that the appropriate level of control is applied to their use of computing facilities.

16. It is also important that potential corporate applications are identified and not developed independently by users (even as an interim system) without referral to the ITCC which might wish to consider, say, whether the priority given the development be increased, with deployment of DP Staff or the use of consultants. Approval for the development of a pilot or prototype Class C system under the Class B control procedures, may be agreed to by the ITCC if the benefits arising warrant the development.

#### CONCLUSION

17. These procedures have been introduced to ensure that the AAO makes the most effective use of technology and the staff available to it at any time and to ensure that there is an adequate level of management control over system development activities including user development activities.

18. Any questions on the application of the procedures should be referred to the User Support Centre (via the hotline). Comments on the procedures or suggested changes should be referred to the Assistant Auditor-General, DP Branch or put forward through Regional or Divisional Management to the Information Technology Co-ordinating Committee for consideration.

J. V. Monaghan  
Auditor-General

ATTACHMENT A

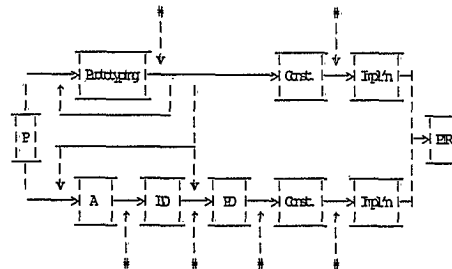
AUSTRALIAN AUDIT OFFICE  
GUIDELINES FOR THE DEVELOPMENT OF COMPUTER SYSTEMS

#### 1. INTRODUCTION

1.1 The following guidelines outline the approved procedures for the development of systems. The procedures have been made as flexible as possible to allow for prototyping (defined below) and development by other than DP staff (referred to as "end-user" development). The reason that the guidelines are required is to ensure systems are developed in a controlled environment and that the resources put into the development of systems are in accordance with the corporate objectives of the Office. These guidelines and procedures are also intended to meet the basic audit requirements expected within our auditees.

1.2 The following System Development Life Cycle (SDLC) diagram depicts the development stages and associated mandatory review points. There are many different paths, in addition to the paths shown on the diagram, which may be followed depending on the nature of the system being developed. The important point is that the proposed path must be identified in the System Proposal and the reasons for selecting the path clearly stated. Each of the stages and review points are outlined in more detail below.

#### 2. SYSTEM DEVELOPMENT LIFE CYCLE (SDLC)



#### LEGEND

P	System Proposal and Planning
Prototyping	Prototype Development
A	Analysis
LD	Logical Design
PD	Physical Design
Const.	Construction
Impl'n	Implementation
PIR	Post-Implementation Review
#	Mandatory Review Point

2.1 The above SDLC diagram is intended as a guide to the development stages. Different paths to those shown on the diagram may be proposed to suit a specific project, e.g. the analysis phase may be undertaken and then followed by prototyping, construction and implementation.

2.2 The actual development of systems may be undertaken by end users with assistance from the User Support Group or by DP staff. The System Proposal must indicate who is to develop the system and what assistance is required from either DP staff or the User Support Group.

### 3. MANDATORY REVIEW POINTS

3.1 The mandatory review points are indicated (#) on the SDLC diagram. These points allow the Information Technology Co-ordination Committee (ITCC) to review the progress to date and approve the further allocation of resources to the project.

3.2 The review report will be prepared by the project team and may vary from a page or two to a comprehensive report. The report must assess the actual resources used to date against the original estimates. Any significant resource or technical problems must be detailed.

### 4. SYSTEM PROPOSAL AND PLANNING

4.1 For each system a System Proposal will be required. The purpose of this document is to identify the aims of the system and to outline the proposed development path. Initial resource estimates will be required at this stage. For very complex systems the estimate may be limited to the effort required to develop a Functional Specification leading to more accurate estimates of subsequent stages. In general, the System Proposal should contain the following:-

- an outline of the proposed system and the functions it is attempting to address;
- relationship to existing and/or any other proposed systems;
- an assessment of the impact on specific areas of the Office, i.e., any changes to existing procedures;
- any existing or proposed consultation with user areas, Planning & Legislative Services Section, DP Branch, etc.;
- some qualitative assessment of the costs and benefits of the system (if possible, assign dollar values to costs and benefits);
- an estimate of the development resources required, including end-user resources, DP resources, Planning & Legislative Services, Internal Audit, etc. - the User Support Group will provide assistance with this estimation;

- when the system is required to be operational by and what the implications are if it is not available by the required date;
- a project development plan with resource estimates and the proposed composition of the project development team. The reasons for selecting a particular set of development stages must be outlined;
- an outline of any potential job impact, training issues or occupational health and safety issues associated with the implementation of the proposed system;
- a Functional Specification. The Functional Specification must be in sufficient detail to clearly document the requirements of the system. This includes the processing rules and the reporting requirements. Where the resources required to develop the Functional Specification are significant a brief outline may be included at this stage with an estimate of the resources required to develop the full specification.

### 5. PROTOTYPING

5.1 Prototyping is a method of system development where the users requirements are progressively refined by developing "prototypes" of the final system. The prototyping exercise may lead directly to the implementation of the final system or it may be used as an alternative to the development of a full Functional Specification and the analysis phase, i.e., the prototyped system is used as the basis for the development of the full system using the traditional system development methodology of analysis, design, construction and implementation.

5.2 The system development methodology outlined in the above diagram is intended to allow for the use of a wide variation of development phases which may include prototyping. The important issue is that the intended path is outlined clearly in the System Proposal to avoid what is called "unintentional prototyping". Prototyping may seem to be the way to go for all systems development, however it is not appropriate in some cases. It is possible for prototyping to take significantly more resources to develop a system when it is used incorrectly. In addition, it is often difficult to determine when a prototype system is complete and it should be put into production. The User Support group will advise on the appropriate development path and whether prototyping should be used for a particular system.

5.3 In relation to the mandatory review points, the prototyping development will be subject to a mandatory review at least monthly. This is to ensure the prototyping is proceeding in a controlled manner and review whether further development effort is warranted or if an alternative path should be taken.



5.4 The review report must include an assessment of the progress to date against the original estimates together with any problems encountered or expected. If required, the estimates should be revised and an amended project plan submitted for approval.

## 6. ANALYSIS

6.1 The analysis phase is intended to give the necessary information to proceed with the design and construction phases. It will normally be undertaken using established "structured analysis" techniques under the direction of DP staff. The System Proposal may recommend the use of alternative analysis techniques if considered appropriate to the particular system. The User Support Group will provide advice on the approved analysis techniques.

6.2 On completion of the analysis phase a review report will be prepared for consideration by the ITCC. The report must include an assessment of the progress to date against the original estimates together with any problems encountered or expected. If required, the estimates should be revised and an amended project plan submitted for approval.

## 7. LOGICAL DESIGN

7.1 The logical design phase is a translation of the information gained in the analysis phase into a logical computer system. The physical constraints of the particular computer installation and software packages are ignored in this phase. This will normally be done using established "structured design" techniques under the direction of DP staff.

7.2 In some cases the logical design phase may be combined with the physical design phase. This must be stated in the System Proposal and will normally be considered where the combined design phase will take approximately one month or less.

7.3 The review report must include an assessment of the progress to date against the original estimates together with any problems encountered or expected. If required, the estimates should be revised and an amended project plan submitted for approval.

## 8. PHYSICAL DESIGN

8.1 The physical design phase is where the practical constraints of the available software and hardware are taken into account. In most cases it involves a revision of the logical design to suit the appropriate software package being used and to ensure the system will have adequate performance under "live" operational conditions. The physical design phase will normally be undertaken by DP staff.

8.2 The review report must include an assessment of the progress to date against the original estimates together with any problems encountered or expected. If required, the estimates should be revised and an amended project plan submitted for approval.

## 9. CONSTRUCTION

9.1 The construction phase is where the system is actually "constructed" using the available software. This may be done either by end users or by DP staff, depending on the available software packages. This phase includes system testing and documentation. The final product, including the documentation, must be approved by the DP Standards Officer before the implementation phase is commenced.

9.2 The review report must include an assessment of the progress to date against the original estimates together with any problems encountered or expected. If required, the estimates should be revised and an amended project plan submitted for approval. The report must include the approval, with any associated comments, of the DP Standards Officer.

## 10. IMPLEMENTATION

10.1 The implementation phase consists of acceptance testing by the users and the physical implementation as a production system. The system must be "signed off" by the users indicating that it meets the initial Functional Specification. It will then be passed to the Production Control Group in DP Branch for installation as a production system.

10.2 Part of this phase is the implementation of any policies or procedures to support the administration of the system. The resources required to develop these procedures must be included in the system proposal.

10.3 The review report must include an assessment of the actual resources used against the original estimates. Any "lessons learned" together with recommendations for a post-implementation review must be included.

10.4 Once the system has been placed in production any further amendments or enhancements must be in accordance with the approved change control procedures.

11. POST-IMPLEMENTATION REVIEW

11.1 A post-implementation review will be conducted as indicated in the Implementation Report unless deemed unnecessary by the ITCC. The scope of the review may vary from a brief report by the project development team and/or users to a full review of the system and its objectives. As part of the review the actual development effort will be compared with the initial estimates and any "lessons learned" noted. The review should indicate any required amendments or recommended enhancements.

APPLICATION REGISTRATION FORM

APPLICATION: \_\_\_\_\_

DESCRIPTION: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PACKAGE USED: \_\_\_\_\_

APPROVAL BY: \_\_\_\_\_

DESIGNATION: \_\_\_\_\_

DEVELOPED BY: \_\_\_\_\_

LOCATION: \_\_\_\_\_

CONTACT NO.: \_\_\_\_\_

VERIFIED BY: \_\_\_\_\_

LOCATION: \_\_\_\_\_

CONTACT NO.: \_\_\_\_\_

POTENTIAL FOR USE IN OTHER AREAS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DETAILS OF DOCUMENTATION (a copy should be attached): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ATTACHMENT B

INFORMATION TECHNOLOGY POLICY COMMITTEE  
19 FEBRUARY 1986

ACTION ITEMS ARISING OUT OF THE MEETING

Attendance Mr. J.V. Monaghan, Mr. D.J. Hill,  
Mr. C. Monaghan, Mr. J. O'Neill, Mr. C.  
McPherson, Mr. B. Kimball, Mr. M. Shanahan and  
Mr. B. Rossell. Mr Wagland attended for Agenda  
Item 3.

Agenda Item 1

- (1) ITPC endorsement was sought for the draft procedures for managing DP development within the AAO. (Item 1.2)
- The proposed Administrative Circular was approved in principle with some suggested editorial changes. These included :
- . That the ITPC should include Assistant Auditor-General DP Branch with additional representation from other areas of the office as required.
  - . That para 14 of the draft should include explanation of the risks associated with Category B systems.
- The Terms of Reference for the ITPC and ITCC were presented and approved (copy attached).
- (2) Decision as to who should be members of the ITCC. (Item 1.4)
- It was agreed that members are to be First Assistant Auditor-General, Corporate Management Division, Assistant Auditor-General DP Branch, Assistant Auditor-General Resource Management & Development Branch, Regional Manager ACT plus an SES Officer from each Division. Other representation may be included depending on the agenda
- (3) ITPC to note procedures for changes to approved Information Systems Program (ISP) as outlined in para 7 of the draft Admin Circular.

This was noted by the Committee.

Agenda Item 2

- (4) ITPC agreement was sought to issues relating to the RFT preparation (Attachment 2A):
- . That the implementation schedule specify initial delivery for the mainframe and pilot network  
Agreed
  - . That the RFT specify an IBM Mainframe as a mandatory requirement  
Agreed - IBM or IBM compatible mainframe
  - . That the DOLGAS recommendation that the AAO not seek a Prime Contractor arrangement be adopted if our basic concerns can be satisfied by alternative arrangements.  
It was decided that Prime Contractor arrangements would be mandatory unless AAO is fully convinced its requirements can be met by means other than Prime Contractor
  - . Desirably, applications development software should be able to run on both the IBM (or IBM compatible) host mainframe and on regional nodes  
Agreed
  - . RFT specify processing capability in Regions as mandatory  
Agreed
  - . Standalone workstations and portables be MS-DOS (IBM Compatible)  
Agreed
  - . Functionality of workstations to include the facility for displaying monochrome graphics  
Agreed
  - . Colour workstations be available as an option  
Agreed

## Other

DE Branch to prepare a briefing paper for the ITCC meeting outlining the relative trade-offs between "dumb terminals" and PC's, especially relating to the required level of functionality.

- (5) ITPC to note concern regarding demand for additional interim PC's. (Item 2.6 (11))

Noted - recommendation for additional (interim) PC's to be prepared for next ITCC meeting

- (6) ITPC to note requirement for formal endorsement by the ITPC of RFT prior to its issue. (Attachment 2A para 1.9)

Noted

Agenda Item 3

- (7) Work priorities for Computer Services Section to be: (Item 3.7)

- . SAP Amendments
- . MAIS Conversion
- . Portfolio Prototype development
- . Office Precedent System development

Agreed .

- (8) That a Director be nominated for initial involvement in Portfolio Specification (from May onwards). (Item 3.17)

Agreed - nomination to be determined after PRC meeting

- (9) That the proposal for continuing development of CAATs be approved. (Item 3.21)

Approved

Agenda Item 4

- (10) That phase II development include the introduction of office communication and information processing facilities. (Item 4.3)

Approved - management procedures for the introduction of office communication and information processing facilities to be developed but implementation to proceed with caution

- (11) Endorsement of the general strategy for user training (to be considered further by ITCC). (Item 4.9 - 4.11)

General endorsement but to be considered in more detail by ITCC.

Agenda Item 5

- (12) ITPC agreement to recruitment/staffing proposals. (Item 5.1 - 5.2)

Item 5.1 (1) approved - further recruitment to be approved by subsequent ITPC meetings

Agenda Item 6

- (13) ITPC endorsement of general strategy for user involvement (this will be considered further by ITCC). (Item 6.1 - 6.8)

The importance of this issue endorsed.

- (14) ITPC approval in principle sought to concept of user involvement in Programming Activities. (Item 6.9 - 6.10)

Approved in principle

Proposed date of next meeting : 21 May 1986

B.T. Kimball  
Acting First Assistant Auditor-General  
Corporate Management Division

14 March 1986

AUSTRALIAN AUDIT OFFICE                      ATTACHMENT C  
STATEMENT OF COST FOR ACQUISITION OF COMPUTING EQUIPMENT  
(\$000's)

	1986/87	1987/88	1988/89	1989/90	TOTAL
<b>CAPITAL EXPENDITURE</b>					
Interim PC's, etc.	170				170
<b>Mainframe Hardware</b>					
CPU		600		200	800
Mass Storage		600		200	800
Tape Units & Printers		150			150
Front End Processor		120			120
<b>Operational &amp; Development Software</b>					
Interim PC's	25				25
Operational 'Utilities'		200			200
DEMS Package		450	150	100	700
Text Retrieval Package		100			100
CAATs Development Tools		50			50
Library, Personnel, etc.			100	100	200
Network H'ware - Branch Nodes		1,140	225		1,365
Network H'ware - Work Stations		1,085	530	215	1,830
Network Software		235	170	90	495
Site Preparation					
Mainframe - Power & A/C, etc.	450				450
Power Conditioning, etc. (ACT, NSW, VIC)	60				60
<b>TOTAL CAPITAL COSTS</b>	<b>705</b>	<b>4,730</b>	<b>1,175</b>	<b>905</b>	<b>7,515</b>
<b>OTHER EXPENDITURE</b>					
<b>Development Costs (excluding staff)</b>					
Consultants	400	500	100	100	1,100
Computer Time	600	400	50		1,050
Ergonomic Furniture	25	100	50		175
External Courses	25	50	50	25	150
<b>Total Development Costs</b>	<b>1,050</b>	<b>1,050</b>	<b>250</b>	<b>125</b>	<b>2,475</b>

Ongoing Costs					
Mainframe Maintenance	65	65	65		195
<b>Software Lease/Maintenance</b>					
Operating System (MVS)	250	250	250		750
Operating System - Utilities	35	35	35		105
DEMS, etc.	75	100	100		275
<b>Network Maintenance</b>					
Network Nodes	20	30	40		90
Workstations & PC's	50	50	70		170
Communication	20	150	200	200	570
Consumables	25	50	50	50	175
<b>Total Ongoing Costs</b>	<b>95</b>	<b>695</b>	<b>800</b>	<b>810</b>	<b>2,400</b>
<b>TOTAL OTHER EXPENDITURE</b>	<b>1,145</b>	<b>1,745</b>	<b>1,050</b>	<b>935</b>	<b>4,875</b>
<b>TOTAL CAPITAL &amp; OTHER COSTS</b>	<b>1,850</b>	<b>6,475</b>	<b>2,225</b>	<b>1,840</b>	<b>12,390</b>
<b>STAFFING</b>					
<b>DP Staff</b>					
Applications, etc.	114	266	266	266	912
Technical Support	152	266	266	266	950
Operations	60	180	180	180	600
User Support	228	228	228	228	912
Associated Admin. Costs	60	115	115	115	405
<b>TOTAL STAFF COSTS</b>	<b>614</b>	<b>1,055</b>	<b>1,055</b>	<b>1,055</b>	<b>3,779</b>

	1986/87	1987/88	1988/89	1989/90	TOTAL
ACCOMMODATION COSTS					
Rental (500 sq. m.)	75	100	100	100	375
Fit-out - clerical	150				150
Fit-out - computer	75				75
<b>TOTAL EXPENDITURE</b>	<b>2,764</b>	<b>7,630</b>	<b>3,380</b>	<b>2,995</b>	<b>16,769</b>
Less EXISTING EXPENDITURE	-380	-380	-380	-380	-1,520
<b>TOTAL ADDITIONAL EXPENDITURE</b>	<b>2,384</b>	<b>7,250</b>	<b>3,000</b>	<b>2,615</b>	<b>15,249</b>
<b>ADDITIONAL AOSL REQUIRED</b>					
Applications, etc.	+3	+4	NIL	NIL	+7
Technical Support	+4	+3			+7
Operations	+2	+4			+6
User Support	+6	NIL	NIL	NIL	+6
<b>TOTAL</b>	<b>+15</b>	<b>+11</b>	<b>NIL</b>	<b>NIL</b>	<b>+26</b>

## 1. General

The AAO technical strategy proposes a range of applications to be supported on a central computing facility and networks in central office and the regional areas.

The AAO's strategy is to have those elements of processing that are purely regional located in a regional computing node supporting the regional network. The logical split of that processing by application system is shown at Attachment A. It is, however, recognised that some elements of processing may be transferred to the central computing facility. This document does not address this.

The purpose of this paper is to describe in detail the expected transaction volumes for current and proposed applications to be used on the various computing facilities. The objective is to identify the maximum demand on the system.

It is expected that in the first three years of operation there will be a heavy development load placed on the chosen computer environment. Throughout this period the development load should progressively decrease and normal production work should be the major component of the overall workload.

## 2. Central Computing Facility

The applications expected to run solely upon the CCF are :-

1. Auditee Portfolio
2. Audit Monitoring
3. Office Information
4. Library
5. Personnel and Establishments
6. Financial CAATS
7. Word Processing

However, for most of these systems data will be maintained on the CCF by all offices within the AAO via the network.

### 3. Central Office Network

The central network node must cater for all communication traffic from workstations within the regional network to any other regional network or to the Central Office network or to the Central Computing Facility ( via the C.O. network).

Also, the Central network must cater for those applications which are to be run at the regional level. The pattern of usage in the Central Office will however be different to that for a regional network.

The applications expected to run on the central network are:-

1. Audit Monitoring (low usage)
2. Working Papers (low usage)
3. Electronic mail
4. spreadsheet / wordprocessing
5. CAATS (low usage)
6. Word Processing

### 4. Regional Network

The regional network will cater for all communications traffic and facilities within a region. The volume of work will depend on the number of staff using the network. The main applications are as follows :-

1. Audit Monitoring
2. Working Papers
3. Electronic mail
4. spreadsheet / wordprocessing
5. CAATS
6. Word Processing

### 5. Major Applications and Transaction volumes

Transaction volumes for the major applications are detailed in the following sections.

#### 5.1. AUDIT PORTFOLIO / PLANNING

This application will be used to update and interrogate information held about Auditees. The following table lists the type of staff and expected transaction volumes.

Position	Number	trans / day
Director	34	10
Assistant Director	34	5
Principal Auditor	64	3
Senior Auditor	122	7
Field Auditor	195	1
C.O. Management	20	1
Regional Management	10	1

The following table lists average and peak transactions per day plus estimated storage volumes.

average transactions per minute	5
peak transaction load (per minute)	10 assuming doubling of load. Peak period is April to August

#### 5.1.1. Storage requirements

It is envisaged that the initial size of the Portfolio/Planning application will cater for the SAP. After installation it is expected that the size will increase greatly and then settle down as information is added about Auditees. The following table shows the expected storage requirements.

storage	1988	10 Mb
	1990	300 Mb

#### 5.1.2. Development load

The system development will be implemented in three phases.

1. Prototype - 30 manweeks for 3 people
2. development - 110 manweeks for 5 people
3. data capture - 4 manweeks for 2 people per directorate

## 5.2. Audit Monitoring / Forward Scheduling

This application will be used to control and monitor the progress of Audits conducted by the office. It will also be used to schedule future audits based upon priority and policy. The expected frequency of usage for the application is expected to be weekly updating for monitoring and monthly for Forward Scheduling. The table below gives a breakdown of figures prepared to-date for the application. Some areas of data have not yet been completed.

Application	CO	ACT	NSW	VIC	QLD	SA	WA	TAS
Monitoring	90	100	100	100	30	30	20	12
TS6s entered weekly								

Scheduling	8	8	8	4	4	4	4	4
sessions per day								

### Storage requirements

Application	1988	1990
Monitoring	1.5 Mb	3.5 Mb held on regional network
Scheduling	1.0 Mb	2.0 Mb as above

## 5.3. Audit Support

The Audit Support area covers a number of functions. Some of these are :-

1. Spreadsheets & Word Processing
2. CAATS (Computer Aided Audit Techniques) both
  - a) Financial
  - b) Project oriented
3. Workpaper system
  - Workpapers generated by auditors used in their work
4. Flowcharting

Further details for these functions will be discussed in the following sections.

## 5.3.1. Spreadsheets & Word Processing

These functions are expected to be catered for by the micros or on the network. The Central Computing Facility will not perform any of these functions. It is expected that all audit staff will have access and will use these functions as part of their work.

The table below details the volume statistics.

Function	concurrent users	ave trans per day	peak trans per day
Spreadsheets	5	100	250
Word Processing	20	200 pages	500 pages

These figures are for the large regional networks. The small networks would be in the vicinity of a 1/4 to a 1/2 lower.

## 5.3.2. CAATS

### Financial

The financial CAATS will be used to conduct audits and produce financial statements of auditees.

### Project

The tools developed for Project CAATS will be used as and when they are needed. These tools include the use of SAS, and any other software as required. They will include small systems developed in-house.

## 5.3.3. Workpaper system

This application will be used by audit staff during the processing of an audit. It is expected to hold the working information required by the auditor. It may include references to / or actual spreadsheet and WP information. Transaction volumes for this system has been catered for by the spreadsheet and wp volumes given in section 5.3.1.

## 5.3.4. Flowcharting system.



#### 5.4. Office Information

The Office Information Application will provide information on

1. Legal Opinions
2. Office Policy and Precedents

Workflow and storage volumes are detailed in the following 2 sections.

##### 5.4.1. Legal Opinions

It is expected that the AAO will link into the Attorney-General's Legal system to obtain this information. This will be subject to a feasibility study and approval from the Attorney-General's Department.

The expected usage rate will be low as will the storage requirement.

##### 5.4.2. Office Policy and Precedents

This application will hold a database containing the following :-

1. General Audit Manual
2. Audit Memoranda
3. Administrative Circulars (current)
4. Past Audit Plans

##### 5.4.2.1. Transaction Volume

The following table details the expected transaction volume.

Function	No. of Users	Transaction rate per day
GAM	400	400
Audit Memoranda	"	100
Admin Circulars	500	50
Past Audit Plans	200	20

##### 5.4.2.2. Storage Requirements

Function	Storage Requirements	
	1988	1990
GAM	1Mb	1Mb
Audit Memoranda	300K	500K
Admin Circulars	400k	700K
Past Audit Plans	12Mb	24Mb

#### 5.5. Office Automation

##### 5.5.1. Electronic Mail.

Each transaction will be on average 5 lines in length (ie approx 400 bytes).

Below is a table detailing expected transaction volume per day and the transaction destinations.

Destination	CO	ACT	NSW	VIC	QLD	SA	WA	TAS
Internal	200	150	150	150	50	45	35	25
External	1400	100	100	100	35	30	25	15
	2250							

note 1. messages received  
note 2. messages sent

##### Storage Requirements

The storage requirement for electronic mail is highly volatile. If each transaction is stored for 1/2 a day then the following table shows the storage requirement (in 1000 bytes).

CO	ACT	NSW	VIC	QLD	SA	WA	TAS
240	80	80	80	28	25	20	15

##### 5.5.2. Electronic Document Transfer

This section refers to the movement of documents from one workstation on a regional (including central) network to another workstation within the network, to the regional network node, to another regional network or to the CCF. The expected volume flow is given in the following table.

figures in documents per day

from	to								
	CCF	CO	ACT	NSW	VIC	QLD	SA	WA	TAS
CCF	-	-	-	-	-	-	-	-	-
CO	50	20	50	50	50	30	25	20	10
ACT	40	50	20	5	5	3	1	1	1
NSW	40	50	5	20	5	3	1	1	1
VIC	40	50	5	5	20	3	1	1	1
QLD	20	30	5	2	2	10	1	1	1
SA	20	30	5	2	2	1	10	1	1
WA	20	30	5	2	2	1	1	10	1
TAS	20	30	5	2	2	1	1	1	10

##### Storage Requirements

The storage requirements for document store are given in the following table (figures in megabytes).

CCF	CO	ACT	NSW	VIC	QLD	SA	WA	TAS
100	50	50	50	50	40	30	20	10

No of users (Audit Staff)	CCF	CO	ACT	NSW	VIC	QLD	SA	WA	TAS
188	188	110 (80)	110 (80)	110 (80)	108 (80)	41 (30)	32	28	15
Workstations	136	51	51	51	51	17	15	12	8
Concurrent Users	80-100	15-20	15-20	15-20	15-20	6-10	6-10	4-6	4-6

Office Automation Electronic Mail Internal External	CCF	CO	ACT	NSW	VIC	QLD	SA	WA	TAS
100	100	150	150	150	150	50	45	35	25
200	200	100	100	100	100	35	30	25	15
250	250	100	100	100	100	35	30	25	15

note 1. Messages received  
note 2. Messages sent

Document Transfer	Stenos	Others	Monitoring	Forward scheduling	CHATS	Working Paper (100 concurrent audits)
250	250	100	90	110	5	50
30	30	50	110	110	5	50
20	20	50	108	108	1	50
10	10	15	41	41	1	20
10	10	15	32	32	1	20
10	10	10	28	28	1	20
10	10	10	15	15	1	10

- 10 pages/day per steno  
- 2 pages/day for others  
- No. of rses/period (week)  
- sessions/day  
- sessions/day  
- assume WP will be Micro  
input but stored on  
network  
- 2 pages/day

5.6. Office Support

5.6.1. Library

The Library will be controlled by The Central Office Library and hence the Library system will be run on the CCF.

Trans Type	Transaction Table ave trans per minute	peak trans per minute
------------	--	--------------------------

Book in  
book out  
enquiry

5.6.2. Personnel and Establishments

This application will be used by Office services to control and register all staff movements, leave etc. It will be linked to a Skills Inventory system which will hold a register of staff qualifications and experience.

The expected transaction and storage volumes are detailed in the table below.

Function	ave trans per day	peak trans per day	Storage 1988	1990
Leave etc transfers			50	50

Word Processing

The following table details the word processing load for general usage within the Office.

	CO	ACT	NSW	VIC	QLD	SA	WA	TAS
Stenos	250	20	20	20	10	10	10	10
Others	100	50	50	50	15	15	10	10

The above table assumes 10 pages/day for stenos and 2 pages/day for other staff.

MAINFRAME APPLICATIONS

Auditee Portfolio and Planning

400 Audit Staff  
 on average there will be 5 transactions/day per audit staff  
 = 2,000 trans/day  
 (assume 6 hour day)  
 approx 5 transactions per minute  
 Office Information and Precedents

CMATS

Library

Personnel and Establishments

Skills Inventory

Audit Monitoring

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LOCATION	STAFF MONTHS ELIGIBILITY			USING OFFICE			USING OFFICE			USING OFFICE			
	REQ	DIRECTION	TRAINS	FOR	AMOUNT	SP	AMOUNT	NO	OF	STAFF	EXISTING	EXISTING	EXISTING
							FCY	FCY	FCY	FCY	FCY	FCY	FCY
Executive	20		20				0	20	0	1	1	1	1
Administrative			20				0	20	1	0	1	1	1
Typists			5				0	5	0	0	0	0	5
Division A													
Director			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division B													
President's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division C													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division D													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division E													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division F													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division G													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division H													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division I													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division J													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division K													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division L													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division M													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division N													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division O													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division P													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division Q													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division R													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division S													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division T													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division U													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division V													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division W													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division X													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division Y													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
Division Z													
Director's			9				9	9	0	0	0	0	9
Others			10				10	10	0	0	0	0	10
TOTAL	20	31	25	38	32	41	189	0	24	25	32	17	24
								TOTAL	134	135	135	135	134
								TOTAL	134	135	135	135	134
								TOTAL	134	135	135	135	134

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A.C.T. BUDGET

STAFF BUDGETS BY LOCATIONS

LOC./JOB	FEB 1978		MAR 1978		APR 1978		MAY 1978		JUN 1978		JUL 1978		AUG 1978		SEPT 1978		OCT 1978		NOV 1978		DEC 1978	
	WKS.	NET	WKS.	NET	WKS.	NET	WKS.	NET	WKS.	NET	WKS.	NET	WKS.	NET	WKS.	NET	WKS.	NET	WKS.	NET	WKS.	NET
2	2	2	3	13	11	4	37	8	14	3	2	8	12	3	2	8	3	5	4	3	3	3
3	1	0	11	0	0	0	0	2	3	1	2	0	1	2	1	1	2	1	1	1	1	1
4	1	0	11	0	0	0	0	2	3	1	2	0	1	2	1	1	2	1	1	1	1	1
5	1	0	9	0	0	0	0	10	2	3	1	2	0	1	2	1	1	1	1	1	1	1
6	1	0	7	0	0	0	0	7	1	2	1	1	1	1	1	1	1	1	1	1	1	1
7	1	0	6	0	0	0	0	7	1	2	0	1	1	1	1	1	1	1	1	1	1	1
8	1	1	4	0	0	0	0	4	1	2	1	1	0	1	1	1	1	1	1	1	1	1
9	1	1	11	0	0	0	0	13	2	3	1	2	1	1	2	1	2	1	1	1	1	1
TOTAL	2	9	5	73	11	6	107	6	17	32	6	10	23	3	6	0	0	0	0	0	0	0
TOTAL SEC BUDGET																						

A.C.T. BUDGET

STAFF BUDGETS BY LOCATIONS

LOC./JOB	FEB 1978		MAR 1978		APR 1978		MAY 1978		JUN 1978		JUL 1978		AUG 1978		SEPT 1978		OCT 1978		NOV 1978		DEC 1978	
	WKS.	NET	WKS.	NET	WKS.	NET	WKS.	NET	WKS.	NET	WKS.	NET	WKS.	NET	WKS.	NET	WKS.	NET	WKS.	NET	WKS.	NET
2	15	3	22	10	10	62	9	29	3	9	21	3	4	20	3	5	4	4	4	4	4	4
3	1	0	5	0	0	0	1	2	0	1	1	0	1	1	1	1	1	1	1	1	1	1
4	1	0	6	0	0	0	1	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1
5	1	0	5	0	0	0	1	2	0	1	1	0	1	1	1	1	1	1	1	1	1	1
6	1	0	5	0	0	0	1	2	0	1	1	0	1	1	1	1	1	1	1	1	1	1
7	1	0	5	0	0	0	1	2	0	1	1	0	1	1	1	1	1	1	1	1	1	1
8	1	0	7	0	0	0	1	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1
9	1	0	5	0	0	0	1	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1
TOTAL	2	21	3	68	10	112	6	10	13	3	30	3	4	0	0	0	0	0	0	0	0	0
TOTAL SEC BUDGET																						

## VIC. BUNKERS

LOCATION	REG. NET PAUSA		TOPSIS FIB UNIT		NO	PARTIC. NO OF STAFF		TOTAL BY FORMULA		ADJUSTED TOTAL		EXISTING PCS		TOTAL									
	PC FT	MS WP	PC FT	MS WP		PC FT	MS WP	PC FT	MS WP	PC FT	MS WP	PC FT	MS WP	PC FT	MS WP	PC FT	MS WP						
256 Louisville	2	4	4	17	12	7	46	9	17	6	5	19	4	5	19	4	5	4	1				
177 Borneo	1	5						1	2	0	1	1	0	1	1	1	1						
298 Borneo	6	1	19					2	6	1	2	3	0	1	2	1	3	1					
331 Borneo	1	4						1	2	0	1	1	0	1	1	1							
376 Borneo	1	3						1	2	0	1	1	0	1	1	1							
119 K1131a	2	6						1	3	0	1	2	0	1	1	1	1						
437 St. Helena	5	15						3	8	0	1	3	0	1	3	1	3	2					
56 Franklin	1	4						1	2	0	1	1	0	1	1	1							
TOTAL	2	19	4	44	12	7	110	0	19	4	12	27	4	4	0	0	4	29	6	12	7	0	0
TOTAL CECIL QUART	4 19 2 4																						

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## OTHER BUNKERS

LOCATION	REG. NET PA		TOPSIS FIB UNIT		NO	AMOUNT NO OF STAFF		TOTAL BY FORMULA		ADJUSTED TOTAL		EXISTING PCS		TOTAL										
	PC FT	MS WP	PC FT	MS WP		PC FT	MS WP	PC FT	MS WP	PC FT	MS WP	PC FT	MS WP	PC FT	MS WP	PC FT	MS WP							
S.A. - St. King	1	4	1	18	1	4	28	4	10	1	2	4	7	1	2	5	1	2	2	2	2	2		
Borneo	1	2						1	1	0	0	1	0	1										
TOTAL	1	5	1	24	1	5	33	0	5	10	1	2	7	2	0	0	0	0	2	2	0	0	0	
Borneo Island	1	4	1	34				4	12	1	2	5	1	2	4	1	2	3	1	2	3	1	1	
Borneo Negazilla	1	4	1	18				5	29	3	6	1	2	6	1	2	4	1	2	2	1	1	1	
TOTAL	1	2	1	18				2	16	3	6	1	2	3	2	1	1	1	1	1	1	1	1	
TOTAL	3	10	3	50	0	13	87	0	19	27	6	19	3	6	0	0	0	0	13	3	5	6	0	0
TOTAL CECIL QUART	0 10 10 3																							

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GRAND TOTAL 0 45 202 42 74 00 377 44 51 0 0 0 21 5 325 00 0 23 42 0 0 21 0 0  
 379 379  
 TOTAL CECIL QUART 21 00 377 44 374

Section	1987/88		1988/89		1989/90		1990/91		1991/92		1992/93		1993/94		TOTAL
	MANAGE	SOFTWARE	MANAGE	SOFTWARE	MANAGE	SOFTWARE	MANAGE	SOFTWARE	MANAGE	SOFTWARE	MANAGE	SOFTWARE	MANAGE	SOFTWARE	
Section 001	27,000	51,000	27,000	51,000	27,000	51,000	27,000	51,000	27,000	51,000	27,000	51,000	27,000	51,000	270,000
Perfable (PT)	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	1,100,000
Word Processor (WP)	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	2,700,000
C.B. Note	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	1,500,000
Large State Note	10	10	10	10	10	10	10	10	10	10	10	10	10	10	100
Small State Note	10	10	10	10	10	10	10	10	10	10	10	10	10	10	100
Section Note	10	10	10	10	10	10	10	10	10	10	10	10	10	10	100
<b>GRAND TOTAL:</b>															
	1,070,000	1,070,000	1,070,000	1,070,000	1,070,000	1,070,000	1,070,000	1,070,000	1,070,000	1,070,000	1,070,000	1,070,000	1,070,000	1,070,000	10,700,000

Section	1987/88		1988/89		1989/90		1990/91		1991/92		1992/93		1993/94		TOTAL
	MANAGE	SOFTWARE	MANAGE	SOFTWARE	MANAGE	SOFTWARE	MANAGE	SOFTWARE	MANAGE	SOFTWARE	MANAGE	SOFTWARE	MANAGE	SOFTWARE	
Section 001	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	1,000,000
Perfable (PT)	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	250,000
Word Processor (WP)	170,000	170,000	170,000	170,000	170,000	170,000	170,000	170,000	170,000	170,000	170,000	170,000	170,000	170,000	1,700,000
C.B. Note	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	1,500,000
Large State Note	10	10	10	10	10	10	10	10	10	10	10	10	10	10	100
Small State Note	10	10	10	10	10	10	10	10	10	10	10	10	10	10	100
Section Note	10	10	10	10	10	10	10	10	10	10	10	10	10	10	100
<b>GRAND TOTAL:</b>															
	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	1,000,000

Section	1987/88		1988/89		1989/90		1990/91		1991/92		1992/93		1993/94		TOTAL
	MANAGE	SOFTWARE	MANAGE	SOFTWARE	MANAGE	SOFTWARE	MANAGE	SOFTWARE	MANAGE	SOFTWARE	MANAGE	SOFTWARE	MANAGE	SOFTWARE	
Standard PC (PC)	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	100,000
Word Processor (WP)	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	100,000
C.B. Note	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	100,000
Large State Note	10	10	10	10	10	10	10	10	10	10	10	10	10	10	100
Small State Note	10	10	10	10	10	10	10	10	10	10	10	10	10	10	100
Section Note	10	10	10	10	10	10	10	10	10	10	10	10	10	10	100
<b>GRAND TOTAL:</b>															
	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	400,000

## STAFFING

## ATTACHMENT F

## - COMPUTER SERVICES SECTION (+18 AOSL)

The Computer Services Section is responsible for the development and maintenance of corporate systems and the operation of the computing facilities. The subsections are Applications Development, Software and Network Services, and Operations.

Director, CSO5	manage the section
CSO3 Security	security administrator
CSO3 Contracts & Standards	supervise contract programmers and maintain standards
CA16 Administrative Support	administration
CA3 Administrative Support	administration
Applications Development	
Asst. Director, CSO4	project manager
Project Leaders, CSO3 (2)	project leaders
CSO2 (4)	system designers and implementors
CSO1 pool	"programmers"
Software and Network Services	
Asst. Director, CSO4	technical support manager
CSO3 Systems Software	mainframe systems software
CSO2 Systems Software	network systems software
CSO3 Data Base	Data Base administrator
CSO2 Data Base	Data Base administration
CSO3 Network	Network administrator
CSO2 Network	Network administration
CSO1 pool	general support
Operations	
Operations Manager, C18	operations manager
Production Controller, C16	production control
C14 Production Control	production control
Sen. Comp. Operator, Gr2	shift controller
Sen. Comp. Operator, Gr1 (2)	shift supervisor
Computer Operator, Gr2 (2)	operators

## AUDIT SUPPORT SECTION (+2 AOSL)

The Audit Support Section is responsible for the research and development of CAATs. It is also responsible for the overall user support or "Information Centre" function, including both CAATs and other audit related and administrative systems.

Director, C111	manage the section
Asst. Director, CSO4 (2)	
CSO3 (2)	
CSO2 (2)	

## TECHNICAL AUDIT SECTION

The Technical Audit Section is responsible for research into the technical issues associated with the audit of DP systems and the development of associated audit guidelines. An example of this research is the current research into Access Control software packages and the development of appropriate audit guidelines.

Director, C111	manage the section
Asst. Director, CSO4 (2)	
CSO3 (2)	

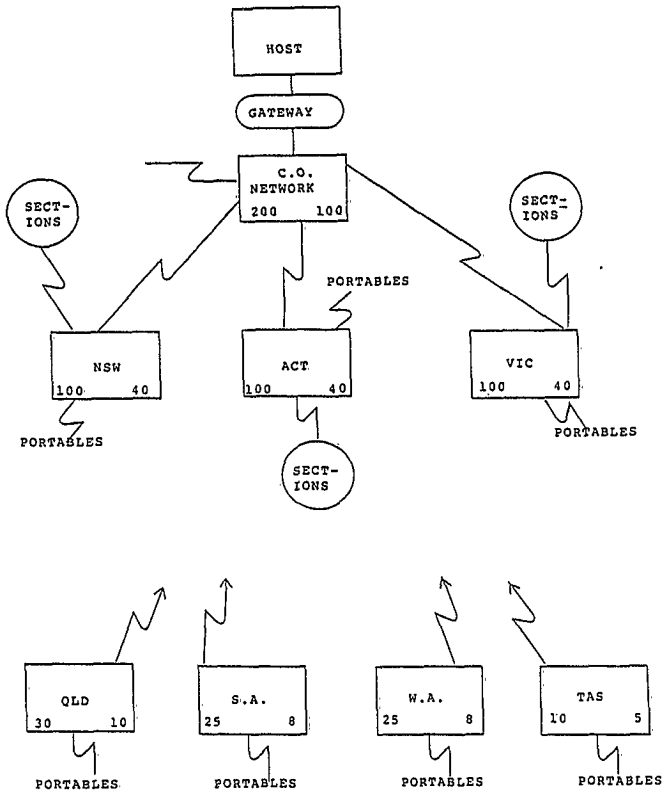
## INFORMATION MANAGEMENT SECTION (+3 AOSL)

This section is located outside the DP Branch and is responsible for the overall information resources within the AAO. This section is the logical "owners" of the corporate systems developed by DP Branch and is responsible for the functional specification and user acceptance of systems.

Director, C111	manage the section
Asst. Director, C19 (2)	manage the AAO information resources

## ACT, NSW &amp; VIC Regional Offices (+3 AOSL)

Audit Support, CSO3	provide assistance with CAATs and act as local system administrator
Audit Support, CSO2	assist with audit support



Withheld - "Commercial-in-Confidence"



ATTACHMENT I

Withheld - "Commercial-in-Confidence"

MAJOR PURCHASING BRANCH  
GPO Box 1920  
CANBERRA ACT 2601

} April 1986

Mr Max Shanahan  
Assistant Auditor-General  
Data Processing Branch  
Australian Audit Office  
GPO Box 707  
CANBERRA ACT 2601

**YOUR PROPOSED ADP ACQUISITION : IBM COMPATIBLE MAINFRAME**

I refer to the meeting you had with my officers on March 20 1986 regarding your proposed major acquisition.

There has been some industry disquiet over your publicly announced proposal to acquire IBM or IBM compatible mainframe equipment. These comments are understandable in view of the fact that you are a new user with no commitment to a particular course.

I understand that your proposal is based on the premise that 60% of your clients have IBM or compatible systems and that your officers will need to be familiar with software running on IBM systems to be able to audit them effectively.

Your argument in itself is not sufficient to substantiate a case for confining a requirement of this size to the IBM compatible market for the following reasons:-

- a) Your officers would also need to familiarise themselves with other non-IBM software which is owned by the Commonwealth.
- b) Systems familiarisation in the IBM environment could be achieved in the same way in which you plan to deal with the present non-IBM environment.
- c) Irrespective of the hardware you acquire your officers will need to undergo extensive training in the software to be utilised throughout all client departments.
- d) If familiarity with software running on IBM systems is crucial for audit purposes, then this can be achieved by either taking advantage of suitable training courses and/or by using clients/bureau computer resources through networking, or
- e) You may acquire smaller systems from different vendors capable of running typical software which is being used in different departments of the Commonwealth.

The quoted figure of 60% of your clients having IBM compatible systems needs to be substantiated. We would be interested in details of how this figure was arrived at as it does not accord with our experience of mainframe capacity installed by Commonwealth organisations.

I would appreciate your further comments on this matter since we cannot justify restriction to IBM or an IBM compatible system on the basis of your present case.

*R.D. Rubie*  
(R.D. Rubie)  
Assistant Secretary

P86/37

The Secretary  
Department of Local Government and  
Administrative Services  
GPO Box 1920  
CANBERRA A.C.T. 2601

Attention : Mr. R. Rubie

CERTIFICATE OF EXEMPTION

1. The Australian Audit Office (AAO) has Government endorsement, subject to review by the Joint Parliamentary Committee of Public Accounts (JCPA), of a proposal to acquire and implement a central computing facility together with a series of local network facilities in Central and Regional Offices. These facilities will be used to develop and implement a range of Information Management Systems and Audit Support Facilities over the next 3 - 4 years.
2. It is a decision of this Office that the element of the overall RFT relating to the central computing facilities should be restricted to IBM Compatible equipment. The network, including the Central Office node, and associated peripherals and software will be open to public tender. I am therefore seeking your agreement to a Certificate of Exemption for that purpose.
3. This issue was discussed with officers of your department on March 20 1986. Following that discussion, in a letter dated 3 April 1986 Mr Rubie of the Major Purchasing Branch of your department requested further information on the reason for the proposed restriction. This is provided as Attachment A.
4. In his letter Mr Rubie raised a number of concerns about the AAO's proposal to restrict its tender. I believe these are adequately covered in the attachment but will comment separately on the issues raised to ensure that there is no misunderstanding about these particular points.
5. The points made are as follows:
  - a) "Your officers would also need to familiarise themselves with other non-IBM software which is owned by the Commonwealth."

It is agreed that the selection of a IBM compatible equipment will not provide AAO staff with experience with products used by auditees with non-IBM equipment. However, following the experience in overseas audit institutions, the AAO has already commenced to develop a standard interface for the majority of Computer Assisted Audit Techniques (CAATs) that are used in the audit of financial statements. This initiative is intended to provide a standard interface, familiar to all audit staff, thus minimising the necessity for audit staff to be familiar with the large number of different DP environments encountered at auditees. The data will either be transferred from the auditee site to the AAO site, generally by magnetic tape, or the standard CAATs interface will be temporarily loaded onto the auditee site, assuming that the auditee has a compatible environment. This approach has been trialled and gained the general acceptance of audit staff.

However, the CAATs used in the audit of financial statements represents only part of the general use of CAATs. Specialised CAATs are required to support project audits and these CAATs vary with each audit. Therefore, DP audit staff will have to be able to quickly develop some form of system to support the audit. Once again, this may have to be done at the auditee site.

Therefore, whilst the DP audit staff will have to potentially use a wide range of different equipment the IBM compatible environment will still be the most common environment they are likely to encounter. Familiarity with the IBM compatible environment will obviously improve productivity more than familiarity with any other environment.

- b) "System familiarisation in the IBM environment could be achieved in the same way in which you plan to deal with the present non-IBM environment."

The task of ensuring audit staff, both DP and field, have sufficient knowledge of particular environments is a major problem for the AAO. DP audit staff generally encounter several different DP environments as they progress from one audit to the next. Due to the high staff turnover and the competing demands for DP specialists, it is rarely possible for one DP auditor to specialise in one particular environment and be available for related audits. In reality, whoever is available will be allocated to the next audit.

As the IBM compatible environment is predominant the major training requirement is in respect to this environment. Therefore, if our DP audit staff were familiar with an IBM compatible environment through the use of the standard AAO facilities, the overall training requirement will be minimised. Training in other environments will remain a problem for which there is no straightforward solution.

- c) "Irrespective of the hardware you acquire your officers will need to undergo extensive training in the software to be utilised throughout client departments."

As already outlined, the AAO's strategy is to set up an environment that in the first instance will be used at the AAO site on files extracted from the auditees. While the AAO will continue to develop some CAATs at auditees sites, the requirement for training is minimised if the audit staff are familiar with an IBM compatible environment.

- d) "If familiarity with software running on IBM systems is crucial for audit purposes then this can be achieved by either taking advantage of suitable training courses and/or by using client/bureau computer resources through networking."

This approach has already been tried and has not succeeded. In the past the AAO has used training courses to upgrade its DP specialist's knowledge of a particular category of equipment and has found that even with DP specialists, training courses do not provide the level of expertise generally required for the audit of complex DP systems. In practice, the DP specialist has to draw on his overall DP experience and relate this as best they can to the particular environment. This problem is exacerbated by the fact that at present the DP specialist receives very little "hands on" practical experience as part of the general audit role. Therefore, his overall DP experience becomes "out of date" compared with the constant change in the technologies used by auditees.

The use of client/bureau facilities has also been tried and has not succeeded. In the past the AAO has used the facilities of the Department of Health, the Department of the Special Minister of State and currently uses CSIRONET. In all cases these external bureau services have not been able to provide the level of service required, mainly due to the priority of their own resource requirements.

The above comments reflect one of the main reasons the AAO is seeking the acquisition of its own facilities. Given that the use of the AAO facilities as part of the general audit task will increase the level of DP awareness of all staff, especially DP specialists, then the maximum benefit from this investment will be achieved if the AAO has an IBM compatible environment.

- e) "You may acquire smaller systems from different vendors capable of running typical software which is being used in different departments of the Commonwealth."

This approach is considered impractical. It would require a significant continuing investment in resources to set up and maintain the many different environments and the benefits of such an approach are unclear.

6. The basis behind the AAO's quoted figure of 60% of auditees with an IBM compatible equipment is outlined in the attachment. We have investigated this further and from this we have found that 46% of all auditees operate in the IBM compatible environment. More importantly, 71% of the large and medium sized auditees operate in the IBM compatible environment. The AAO is aware that its information base is not complete and would be interested in knowing any information DOLGAS maintains about departments' computing facilities.
7. The apparent discrepancy between your experience and our assessment could be explained by the fact that the AAO audits a large number of government entities that do not purchase computer equipment through your department. The point to be recognized is that it would not matter if the IBM compatible market share was even as low as 30%. IBM compatible equipment is the single category of computing equipment that is used by the maximum number of auditees and the selection of that category of equipment will enable the AAO to better position itself to effectively audit in the increasingly computerised environment in the future.
8. The AAO recognizes that the selection of an IBM compatible environment will not solve all of its problems. It will, however, maximize the benefits to be gained from the significant investment in information technology and provide a strategic environment for the future.

M.J. Shanahan  
Assistant Auditor-General  
DP Branch

9 April 1986

## Background

- The Australian Audit Office (AAO) has responsibility for the audit of all Government departments and 182 Statutory Authorities and Government owned companies. It has a comprehensive audit scope which includes the examination of efficiency and financial regularity. It has a staff of approximately 600 of whom 400 are either qualified Accountants or DP Specialist staff directly involved in the audit task. It undertakes in excess of 2000 audits each year.
- Over the last 20 years the AAO has had to respond to the ever increasing impact of the introduction of computer technology in the the organisations it audits. It has responded to that challenge by the introduction of new methods and techniques, by the recruitment of DP specialist staff, and by training the field audit staff in DP audit methods and techniques. From 1974 onwards the AAO's strategy for the development of its DP Audit capability has been to have DP Audit specialist staff undertake the more complex DP audit tasks while advising, training and assisting field audit staff in the audit of less complex DP issues.
- This strategy has been increasingly strained over the last few years by the rapid spread of use of computing within the Public Sector and the increasing complexity of systems and computing environments encountered in major auditees. The rapid expansion in use of computing by auditees has meant that most audits now involve the consideration of computer technology in one form or another. In many cases field audit staff have to deal with DP aspects of audit tasks with little DP specialist assistance.
- The increasing complexity of the computing environments has increased the need for DP specialist staff to undertake the more complex DP audit tasks. Because they are involved in in-depth audits of complex DP systems and complex computing environments, as well as the audit of DP management issues associated with large scale system development, such staff require a background in applications development and increasingly a sound practical understanding of the more complex technical issues associated with DP development.
- In general the AAO recruits DP specialists from other organisations and trains them as auditors. While the AAO attempts to develop field auditors as DP audit specialists it is unable to provide those staff wishing to become DP audit specialists with appropriate "hands-on" computing experience. While the AAO has taken steps to increase the number of DP audit specialist staff, the difficulty of recruiting suitably experienced CSO staff has resulted in many positions remaining vacant or being filled with CSO's with less than the desirable level of experience.

## Basis for the Certificate of Exemption

6. It is recognised that the administrative information processing requirements of the AAO could be met by solutions not including an IBM compatible central mainframe. However, the case for an IBM compatible central mainframe revolves around the general strategic direction considered most appropriate to the overall requirements and future directions of the AAO.
7. The basic requirement for restricting the supply of the central mainframe to an IBM compatible environment is that the experience gained by the AAO in the support of such an environment has a direct relationship to the difficulties currently being encountered by audit staff in the audit of complex DP systems. These difficulties have been outlined in the previous section and in the covering letter. In summary, the major difficulties are maintaining the level of expertise required by DP specialist staff and the requirement for field audit staff to have an increasing level of DP awareness.
8. Both of these problems could be addressed by the AAO acquiring any type of computing environment. That is, any type of in-house DP experience could be used to assist in overcoming these problems. However, when the various computing environments encountered as part of the audit task are analysed it is clear that the IBM compatible environment is predominant (this assertion is discussed in the next section). Therefore, the transfer of expertise from the in-house DP support staff to the DP audit specialists and also to the field audit staff would be of maximum benefit if it assisted with the maximum number of audits. It is the AAO's strong contention that experience in an IBM compatible environment will provide this maximum benefit compared with any other computing environment.
9. In addition, the AAO intends to use its own environment as a model for the development of audit standards and control guidelines. The environment will also be used to assist with the training of staff in DP audit by having the trainees perform various types of audits of the AAO environment to reinforce their theoretical training. Again, the maximum benefit will be obtained if the AAO "model site" is similar to the majority of environments encountered as part of the audit task.
10. As a by-product of the AAO supporting its own DP environment, audit staff will be able to call on the in-house technical support staff as an "independent" source of technical information available to support their audit concerns. These concerns are most significant from an audit viewpoint when they relate to systems processing large amounts of revenue or expenditure. The majority of these systems (detailed in the next section) operate in an IBM compatible environment. Therefore, if the AAO is supporting an IBM compatible environment then this support will be relevant to more audits than any other computing environment.

## Use of IBM by Auditees

11. The predominant computing environment encountered by AAO auditors is the IBM compatible environment. The AAO experience is that such equipment is used in more auditees than any other group of equipment. While the AAO's information base on the types of equipment used by auditees is incomplete, the attached list has been prepared covering the major equipment used in the majority of auditees. Based on this list, approximately 45% of all auditees make use of IBM or IBM compatible equipment. Considering the large and medium auditees in which the greater proportion of AAO resources are directed, the list indicates approximately 70% use an IBM or IBM compatible environment. This is supported by a FOCUS Research Limited survey undertaken in 1985 which concluded that "71% of the mainframe market in the Federal Bureaucracy is IBM or IBM compatible". The AAO recognises that the data used to derive these figures may not be complete, however, the indicative proportion of auditees using an IBM compatible environment is considered valid.

12. To emphasise this point, the following table summarises the machine types used by the "large" auditees.

Departments:	Machine Type
Health	IBM
Housing and Construction	IBM
Finance	AMDAHL
Social Security	AMDAHL
Veteran's Affairs	AMDAHL
Special Minister of State	NAS
Taxation Office	CDC
Industry, Technology and Commerce	UNIVAC
Defence	UNIVAC
Aviation	DIGITAL
Authorities:	
Wheat Board	IBM
Commonwealth Bank	IBM
Qantas	IBM
Health Insurance Commission	IBM
Telecom	HONEYWELL/IBM
Australian Post	DATA GENERAL

## Technical Support

13. To be able to undertake the audit of the more complex DP environments the AAO requires staff with experience in issues such as Systems Software, Access Security, Communications facilities. With the establishment of its own facilities it is intended that staff supporting the AAO's own developments be available on a consulting basis to provide advice and assistance to audit staff.

14. - One of the stated objectives of the AAO in establishing its own computing facilities is to have security and control of the highest level. With those objectives in mind its it is intended that the AAO use its own operations as a model of appropriate management and control procedures so that its operations can be used as reference site for other organisations.

15. The effectiveness of the above objectives is maximised if the AAO has an IBM compatible environment as the in-house experience will be applicable to the maximum number of auditee environments.

#### Examination of Auditee Software

16. The AAO wishes to establish an environment that will allow the examination of elements of software at its own site. In the first instance priority will be given to the examination of the software selected for the AAO's own facilities and in particular to the access control packages selected for the AAO. The greatest value will be gained if this was the software environment used in the greatest number of auditees. The knowledge gained in examining how those packages can be implemented to achieve the greatest level of control and security and the experience gained in auditing those packages in the AAO environment can then be extended to auditee sites and to other software packages with similar function.

17. It is recognised that are limitations to the extent that the AAO will be able to take such action, but the selection of an IBM compatible environment in particular will give the AAO maximum flexibility and maximum benefit from its own facilities in this area.

#### Development of Audit Software to run on Auditee's Computers

18. While the AAO's strategy is to develop computer assisted audit software facilities that will run at its own site, there will be occasions in which audit staff need to run such facilities at the Auditee site. This will be because of special circumstances such as:

- (a) large volume files
- (b) special security requirements, and
- (c) the need to examine files, particularly data base files as they exist in the system.

19. The AAO's experience is that the use of auditee computing facilities often leads to considerable time delays with an increased need to call on auditee support staff for assistance. It is proposed to minimise such problems where possible by initially developing, and testing, such CAAT facilities on the AAO's computer and then to transfer them to the auditee site once they are developed. This will reduce the need to use auditee facilities and the dependence on auditees for the provision of terminal access facilities, computer time, etc. The use of an IBM compatible site will maximise the AAO's ability to do this.

#### Extraction of data and other files from Auditee Computer sites

20. The AAO's DP strategy involves development of facilities to extract data and other files from Auditee's computing facilities to the AAO facility. The AAO is developing a standard facility to allow audit staff to analyse such files with minimal DP specialist support. While it is recognised that most manufacturers have software to transfer data into an IBM format, it is considered that additional complexity would be introduced if the AAO has to transfer files from a non-IBM computer to another non-IBM computer facility. With the establishment of an IBM compatible environment, the majority of cases will involve the transfer of data from an IBM compatible environment to another IBM compatible environment. Other cases will involve the transfer from a non-IBM compatible environment to a compatible IBM environment.

21. The extraction of files will not be solely restricted to data files. The audit of computer environments will involve the examination of various control files associated with such things as access control and security. The establishment of a IBM compatible environment will allow the AAO to have on its sites various standard tools for the analysis of various control files such as SMF files.

#### Requirement for Field Audit Staff to have DP Knowledge

22. Because field audit staff are increasingly having to audit computer-based systems as part of their normal audit task, the AAO strategy is to increase field audit staff's ability to undertake DP audits without requiring the assistance of DP audit specialists. The AAO has over the years provided a wide range of training to field audit staff to achieve that objective. While some degree of success has been achieved, it has long been recognized that the major difficulty in achieving wider involvement has been field audit staff's lack of practical experience and knowledge of computing. In association with the AAO's DP strategic plan it is proposed to achieve this in two ways:

- (a) place increased emphasis on the use of computer assisted audit tools by field audit staff with only limited assistance from DP Audit specialists, and

- (b) increase the DP knowledge of field audit staff through the use of computer based information tools and computer assisted audit techniques.

23. The DP strategic plan seeks therefore to acquire/develop tools to allow field audit staff to participate in the examination of the DP aspects of systems. Such tools will be used both at the AAO's computer and also where appropriate at the auditee's computer site. Where files are extracted from auditee's sites for analysis at the AAO's computer site, field audit staff will have to be sufficiently familiar with computing concepts to be involved with discussion with auditee computer staff about the files to be extracted and to ensure that they have the correct files. The implementation of such a strategy will require that Audit staff will gain familiarity with computer facilities by their use of the computer to support their own activities. It will also require that field audit staff have a working understanding of technical issues such as file structures and job control languages. Since audit staff will be more often working in an IBM compatible environment, the maximum benefit will be achieved if they are familiar with an IBM compatible environment.

#### DP Audit Specialist Development

24. The AAO will continue to require DP audit specialists. Such staff will be involved in the in-depth analysis of Computer Systems and the system development activities. They will also have increasing focus on the more complex DP technical issues such as the audit of Access control, Communications, Database Management Systems. One major problem that faces the AAO is the development of these DP audit specialists. In the main DP specialist staff are recruited from outside the AAO and are trained as auditors. Such staff are difficult to recruit and lose their DP expertise unless they continue to have contact with DP development activity.

25. It is proposed that staff within the AAO, both DP specialists and selected field audit staff, gain experience in DP technology by taking part of the development of computer facilities and by making use of Computer Assisted Audit Techniques. That experience will be of maximum benefit to the audit task if it relates to the majority of audits. This is achieved by the AAO having an IBM compatible environment.

26. In the past the AAO has experienced significant difficulty in recruiting staff with experience in an IBM compatible environment. The AAO does not appear to be an attractive environment for such staff as they quickly lose their experience compared with their peers working in IBM compatible environments and have difficulty in future promotions back to such environments. If the AAO is supporting the audit task with an IBM compatible environment then our ability to recruit and hold suitably qualified staff will be enhanced.

#### Conclusion

27. The basis behind the AAO's case for an IBM Compatible environment is the fact that an increasing proportion of government sector computing involves the use of IBM or IBM Compatible equipment. Because IBM compatible equipment has such a major share of the government computing market it is considered by the AAO's strategy for the continued development of its DP audit capability will be best supported by the acquisition of such equipment.

28. The selection of other than an IBM compatible environment will also reduce the effectiveness of the AAO's strategy to develop its DP audit capability. The AAO's intention is to use its own facilities to develop and maintain the skills of its audit staff, to examine the controls appropriate in an IBM compatible environment and to allow software to be developed for use at auditee sites. It also intends to use the Technical staff involved in supporting its own facilities to provide advice and assistance to audit staff. Without an IBM compatible environment the ability to use the AAO's facilities in this way will be severely limited.

29. It is the firm view of the AAO that its longer term effectiveness and overall flexibility requires the selection of an IBM or IBM compatible environment for the central computing facility. It is therefore proposed that as a strategic direction for the AAO that the central mainframe facility be IBM compatible.

Portfolio	Agency Name	Category	Type	Computer Model	O/S	Other Facilities	Classification	Comments
C	Dept Community Services	NO	ARC					
A	Dept Finance	NO	ANMHL	470/76	MVS/SP		Y	uses DL 'lool machines
A	Treasury	NO	AMDEL	470/76	MVS/SP	ED/11	Y	
A	Immigration & Ethnic Affairs	NO	AMDEL	470/76	MVS/SP	470/76	Y	uses Fluents machine
A	ACRO	NO	AMDEL	470/76	MVS/SP		Y	uses DCF machine
A	Williamstown Dockyards	NO	AMDEL	57	MVS/SP	DDC	Y	Also uses Burroughs
C	Dept Social Security	NO	AMDEL	57	MVS/SP	DDC	Y	uses Office of Defense Support Machines
C	Dept Veterans Affairs	NO	AMDEL	570	MVS/SP	MMG	Y	
C	Dept of Education	NO	AMDEL	850	MVS/SP		Y	
A	Trade Commission	NO	AMDEL	360R	OS 1V/74	Ronywell	Y	
A	Bureau of Statistics	NO	FACOM	H32	OS 1V/74		Y	Also FLOW models H10 & H10
A	Bureau of Meteorology	NO	FACOM	H150, H180	OS 1V/74	CDC	Y	uses CITRONER - CDC
B	CSIRO	NO	FACOM	H150, H180	OS 1V/74	CDC	Y	
B	Aust Institute Marine Science	NO	FACOM	H20	OS 1V/74		Y	
B	Department of Fisheries	NO	FACOM	H20	OS 1V/74		Y	
B	Government Island Resources	NO	FACOM	H20	OS 1V/74		Y	
B	Maritime Fishing Factory	NO	FACOM	H20	OS 1V/74	RF	Y	
B	Attorney-General Dept	NO	FACOM	H20	OS 1V/74	DDC	Y	
B	Maritime Fisheries	NO	FACOM	H20, H160	OS 1V/74	DDC	Y	
C	Aust National Railways	NO	FACOM	H160, H160	OS 1V/74	Prilam	Y	
C	Aust National University	NO	FACOM	H160	OS 1V/74	Prilam	Y	
A	Aust National Bank	NO	TRM	304	MVS/74		Y	also MVS/DC
A	Foreign Affairs	NO	TRM	431	MVS/74	MMG	Y	SPERT 77
A	Australian Wheat Board	NO	TRM	431	MVS		Y	
A	Atomic Energy Commission	NO	TRM	431	MVS		Y	
B	Telecommunications	NO	TRM	431	MVS	RF	Y	
B	OTC	NO	TRM	431	MVS/SP		Y	
B	Aust Health	NO	TRM	569	MVS/SP		Y	
B	Aust Health Authority	NO	TRM	569	MVS/SP		Y	
B	Health Insurance Commission	NO	TRM	569	MVS/SP	DDC	Y	uses Dell mainframe. Also uses Burroughs, not sure of main w/
B	Government Aircraft Factories	NO	TRM	304	MVS/SP		Y	
B	Government Aircraft Factories	NO	TRM	304	MVS/SP		Y	
B	Legal Aid Commission	NO	TRM	431	MVS/SP	MAS	Y	Very large IBM user
B	Legal Aid Commission	NO	TRM	431	MVS/SP	DDC	Y	
C	Dept Housing & Construction	NO	TRM	304	MVS		Y	
C	DOUGLAS Aboriginal Affairs	NO	TRM	304	MVS	SP20	Y	
C	DOUGLAS Aboriginal Affairs	NO	TRM	431, 4741	DOU/VS2		Y	
A	Special Minister of State	NO	MAS	327000	MVS/SP		Y	
A	Aust Federal Police	NO	MAS	4650, 4650	MVS/SP	Prilam 610	Y	
A	Aust Federal Police	NO	MAS	4650, 4650	MVS/SP	DDC	Y	
A	Australian Television	NO	MAS	4650, 4650	MVS/SP	DDC	Y	
B	Aust National Gallery	NO	MAS	4650, 4650	MVS/SP	DDC	Y	
B	Coal	NO	MAS	4650, 4650	MVS/SP	DDC	Y	
B	Cwealth Serum Laboratories	NO	MAS	4650, 4650	MVS/SP	DDC	Y	
B	Cwealth Serum Laboratories	NO	MAS	4650, 4650	MVS/SP	DDC	Y	
B	Dept of Science	NO	MAS	4650, 4650	MVS/SP	DDC	Y	
B	Dept of Science	NO	MAS	4650, 4650	MVS/SP	DDC	Y	
B	Aust Int of Criminology	NO	MAS	4650, 4650	MVS/SP	DDC	Y	
A	Australian Television	NO	MAS	4650, 4650	MVS/SP	DDC	Y	
A	Australian Television	NO	MAS	4650, 4650	MVS/SP	DDC	Y	
A	Patents, Trademarks & Designs	NO	MAS	4650, 4650	MVS/SP	DDC	Y	
B	Anglo-Aust Telescope Board	NO	MAS	4650, 4650	MVS/SP	DDC	Y	

Portfolio	Agency Name	Category	Type	Computer Model	O/S	Other Facilities	Classification	Comments
B	Great Barrier Reef Marine Park	NO	DEC				N	
B	Great Barrier Reef Marine Park	NO	DEC				N	
B	Australia Council	NO	DEC	VAX			N	
C	Dept of Aviation	NO	DEC			ICL	N	
B	Aust Postal Commission	NO	LA	DC			N	DC - Data general
B	Aust Postal Commission	NO	LA	DC			N	DC - Data general
B	Special Broadcasting Service	NO	LA	DC			N	
B	Abney Woodonga Development Cor	NO	LA	DC			N	
A	National Parks & Wildlife	NO	LA	DC			N	
B	National Parks & Wildlife	NO	LA	DC			N	
C	ACT Schools Authority	NO	LA	DC			N	
C	NCR	NO	LA	DC			N	
C	Snowy Mountains Engineering	NO	LA	DC			N	
B	Aust Film Commission	NO	LA	DC			N	
B	Aboriginal Development Coma	NO	LA	DC			N	
B	Aust Film & TV school	NO	LA	DC			N	
B	Aust Film & TV school	NO	LA	DC			N	
B	Ordnance Factory, Merrybourn	NO	LA	DC			N	
B	Small Arms Factory, Lithgow	NO	LA	DC			N	
C	Aust Maritime College	NO	LA	DC			N	
C	Aust Maritime College	NO	LA	DC			N	
A	Dept Meteorology & Energy	NO	LA	DC			N	
A	Aust Wool Corporation	NO	LA	DC			N	
A	Aust Wool Corporation	NO	LA	DC			N	
A	Aust Wool Corporation	NO	LA	DC			N	
A	Aust Wool Corporation	NO	LA	DC			N	
B	Dept of Transport	NO	LA	DC			N	
B	DTIC (Inc OUSTON)	NO	LA	DC			N	
C	Dept of Defence	NO	LA	DC			N	
C	OMPUS	NO	LA	DC			N	
A	Aust National Airlines Coma	NO	LA	DC			N	
A	Primary Industry	NO	LA	DC			N	
A	Primary Industry	NO	LA	DC			N	
A	Aust War Memorial	NO	LA	DC			N	
B	Aust War Memorial	NO	LA	DC			N	
B	Resilient House Construction	NO	LA	DC			N	
C	Building & Construction -	NO	LA	DC			N	

Category Codes  
 LD - Large Department LA - Large Authority  
 MD - Medium Department MA - Medium Authority  
 SD - Small Department SA - Small Authority



**AUSTRALIAN AUDIT OFFICE**

**REVIEW OF ADP STRATEGIC PLAN**

**COVERING THE PERIOD JUNE 1984 TO JUNE 1986**

By David J. Angello  
(Consulting Director DAVID ANGELLO & ASSOCIATES P/L)

**INTRODUCTION**

The objective of this report is to provide a third party analysis of the Australian Audit Office's ADP Strategic Plan. From the onset of this project, it has been obvious that the documented ADP Strategic Plan dated September 1985 does not completely represent the Australian Audit Office's current approach to computerisation.

I have therefore, adopted an approach to consider the Office's current ADP Strategic Plan as stated in the ADP Strategic Plan dated September 1985, ADP Strategic Plan Submission To JCFA dated February 1986 and discussions held with the Office's DP Branch management during the month of March 1986.

The following areas have been reviewed, analysed and recommendations tendered:

- (1) ADP Objectives
- (2) DP Development Strategy
- (3) Application Strategy
- (4) Central Hardware/Software Strategy
- (5) Network Strategy
- (6) Operational Strategy
- (7) Staffing Strategy
- (8) Cost/Benefit Considerations

**1. AAO ADP OBJECTIVES**

There are three principle objectives sought by the AAO to be derived from their proposed ADP Strategic Plan. These include improve staff productivity, improve AAO's knowledge base on advancing information technology and its implications, and provide a model ADP security environment.

**1.1 AAO Performance Through Improved Productivity**

The principle ADP objective sought by the AAO is to improve the performance of audit staff by improving their productivity. This is to be achieved through the introduction of computer technology in the following areas:

- (i) Introduction of computerised audit planning systems for the identification of the most appropriate areas to allocate audit resources. This would be achieved through the implementation of a Portfolio System and Staff Skills Data Base.
- (ii) To provide CAATs (Computer Assisted Audit Techniques) to be able to review the integrity and analyse the accuracy of auditee data on a large scale that can only be effectively achieved through advanced computer technology.
- (iii) To provide audit and clerical support through the introduction of professional support and office automation tools provided to the staff through the proposed computer network and personal computer workstations.

**CONSULTANT'S COMMENT**

This objective is considered to be both reasonable and achievable through the ADP Strategic Plan. In some areas (in particular the Portfolio System) the AAO will have to evolve their methodologies, as there are no models they can benefit from within Australian and few would be available from overseas audit offices.

Their adopted approach to prototype the Portfolio System and to undertake a CAAT's project prior to implementation of the main ADP Hardware/Software Strategy provides a sound strategy to maximise benefits and minimise overall risk.

### 1.2 Improve AAO's Knowledge-Base On Advancing Information Technology

The greatest impact facing the AAO will be and has been the adoption of advancing information technology by Commonwealth government departments and statutory bodies. Their ability to continue to provide a professional level of service (expected and required by the AAO) to audit clients will totally depend on their ability to keep pace with new advancement.

The ADP Strategic Plan will place proven information processing technology within the AAO own work environment and the majority of their 500 staff will have contact with the ADP procedures. Contact and use of the proposed facility will provide a basis for enhancing the audit staff's knowledge of the evolving information technology. It will also provide the capabilities for inhouse testing capability to analyse the impact of selected software and hardware technology that maybe encountered at audit clients.

#### CONSULTANT'S COMMENT

This objective is considered to be essential to the long term role of the AAO within the Commonwealth government and in keeping with the main thrust of the ADP Strategic Plan. The level of conceptual, functional and technical knowledge of the audit staff must keep pace with the advancement being implement in their major audit clients (like the Department of Social Security).

However, the emphasis of the ADP Strategic Plan is knowledge through exposure and availability of test facilities. There is no current planning for establishing a computer-based repository of knowledge to be used by AAO Audit staff on assignments, by professional development branch for training or other government organisation's to assist them in the roles.

#### RECOMMENDATION

The AAO should undertake a study to develop a strategy to develop a computer knowledge-base of advanced information technology for use by their audit staff and other government department staff (internal auditors and ADP professionals). This computer knowledge-base would complement their current ADP Strategic Plan.

### 1.3 Provide Model ADP Security Environment

The AAO's requirement to keep audit client data secure and protected while they have custody of it for audit purposes is essential. This can be best met by having their own processing facilities and having total control of the processing environment (physical, processing and staffing).

#### CONSULTANT'S COMMENT

The ADP Strategic Plan clearly specifies this objective, but does not elaborate on the tools required to achieve the actual model security environment.

It is my considered opinion that the AAO's objective should be broaden to include being a model data processing environment. The audit staff are often required to review and comment on Commonwealth government ADP standards, procedures and operations. They should have a model not to be copied or even for comparative analysis, but to provide an example to other government organisations.

#### RECOMMENDATION

During the installation and implementation phases of the ADP Strategic Plan, the AAO undertake the documentation and establishment of a model ADP environment that includes not only data security, but also system development, data administration, network administration, computer operations, and other ADP functional areas. The AAO has extensive inhouse expertise and external consultants could be used to assist in achieving this objective.

## 2. DP AUDIT DEVELOPMENT STRATEGY

The DP Audit Development Strategy documents the strategy adopted by the AAO for the development of its abilities to undertake the audit of DP issues through the increased use of ADP facilities by their auditors.

### 2.1 Resource Requirements

The AAO has had continuing difficulty in recruiting and maintaining DP specialists and audit staff. Staff shortages have not only impeded the main task of auditing clients, but has had the long term effect of impeding the further development of audit methodologies to cope with advance information processing technology and to improve auditor productivity.

#### CONSULTANT'S COMMENT

It is my considered opinion that one of the side benefits of the adoption of the AAO's Strategic Plan will be an improved image for AAO within the Service. The undertaking of a major computer and network facility will attract the needed high calibre staff, especially if it is emphasised that the installation is to be a model data processing environment.

### 2.2 Audit Methodology

The AAO has made considerable progress in establishing and documenting a system based audit methodology. It has been based on recognised methodologies and the PSB's "Internal Control Guidelines For Computer Based Systems".

#### CONSULTANT'S COMMENT

The methodology will need to be enhanced to take advantage of the new facilities available through the adoption of the ADP Strategic Plan.

#### RECOMMENDATION

The PSB's "Internal Control Guidelines For Computer Based Systems" even though an adequate document requires updating to take consideration of the latest advances in information technology. It would be an ideal opportunity for the various central co-ordination agencies to upgrade these and other guidelines based on the model ADP environment to be established by AAO.

## 2.4 Involving Field Auditor in DP Audits

It is essential to involve the AAO's field auditors in DP audit activities. The majority of the government systems are now computer-based operations and effective use of audit resources requires field audit staff in all levels of DP auditing.

#### CONSULTANT'S COMMENT

The AAO's strategy is sound and comparable to the approach being adopted by internal audit departments within the public and private sector.

### 2.5 Use Of Computers In Audit

The AAO intends to make extensive use of CAATs (Computer Assisted Audit Techniques) to improve productivity, but also to provide better audit coverage of the systems they review. Their CAATs programme is aimed at field auditors as well as specialised DP staff.

#### CONSULTANT'S COMMENT

The approach of using CAAT's is consistent with the AAO's strategy to involve field auditors in DP audit activities. This approach is consistent with international developments and concepts.

### 3. APPLICATION STRATEGY

The AAO currently relies on CSIRONET for major computer support and IBM type personal computers for professional support facilities.

#### 3.1 Proposed Developments

The system plans several major systems for implementation during the life of the ADP Strategic Plan. These include:

- (i) Audit Planning And Control Systems
  - Audit Portfolio System
  - Audit Planning System
  - Audit Monitoring System
  - Audit Scheduling
- (ii) Auditor Profile System
- (iii) Audit Support System (Auditor Tool Kit)
- (iv) Office Information System
- (v) Office Support System
- (vi) Office Automation Systems

#### CONSULTANT'S COMMENTS

The above systems are not inclusive of the identified systems considered for implementation during the ADP Strategic Plan. Additional facilities include knowledge-based systems to assist auditors. Other systems will be identified as the implementation process proceeds.

#### 3.2 Development Strategy & Prototype Systems

The development strategy involves using CSIRONET and IBM type personal computers to phase in the introduction of the facilities and to build prototypes of the systems identified in the ADP Strategic Plan.

#### CONSULTANT'S COMMENT

The approach of making available personal computer based tools for auditors to assist them in their professional activities is sound and has been proven by the AAO's earlier limited introduction of these types of facilities. Other organizations (my own included) have demonstrated that significant productivity and improved work quality can be achieved through the proper implementation and control of this type of computer facilities.

The development of prototype systems for Audit Portfolio/Planning, Office Precedent Systems and CAATs is considered an excellent approach. However, it is my considered opinion that development of the Portfolio/Planning and Office Precedent System on CSIRONET using ADARAS/NATURAL may be ill-advised. The estimated CSIRONET development costs of these prototypes seem excessive and I believe there is a strong possibility that ADARAS/NATURAL may be inappropriate for the development of these systems.

Project CAATs requires substantial computer power and CSIRONET services are suited to this development which is based on SAS.

#### RECOMMENDATION

AAO review the prototype requirements of the Portfolio/Planning and Office Precedent System and consider alternative development strategies. Alternatives could include using IBM type personal computers with development software like REVELATION, DATALEX or SYSTEMATIC's INFO, installing (rent or purchase used system) IBM multiuser PC or small mini, and assessing other alternatives.

#### 4. CENTRAL HARDWARE/SOFTWARE STRATEGY

The AAO central hardware strategy is based on the installation of an IBM or IBM compatible mainframe similar to the IBM 4381 Group 12 with about 2MB of memory, 5 GB of mass storage and dual magnetic tape drives.

#### 4.1 IBM or IBM Compatible Hardware Strategy

The IBM type strategy has been justified for the following reasons:

- (i) Over 60% of auditee clients use IBM or IBM compatible processing environments.
- (ii) Software can be obtained that will run on inhouse machine and on large number (over 60%) of client installations.
- (iii) Transfer of data will be easier and compatibility with IBM environment is provided by most (if not all) other vendors.
- (iv) AAO staff will be able gain inhouse experience on IBM type processing environments.

#### CONSULTANT'S COMMENTS

The AAO can meet their basic objectives with a wide variety of hardware & software options. I believe the AAO has understated the advantages of their central site being IBM type installation. Additional reasons should include:

- (i) A high portion of their most important audit clients use IBM type processing environment and these form some of the most complex ADP environments within the Commonwealth. These include Social Security, CSIRO, Health, Medibank, Finance, Immigration and Ethnic Affairs, Federal Police, National Library, Defence Support, Housing & Construction, and others.
- (ii) Specialised audit software is available on IBM type environments that is of limited availability on other vendor hardware environments i.e. ADP Auditor, PANAUDIT, PANRISK, etc.
- (iii) IBM trained staff are the most widely available and an IBM type model site would attract a broader selection of staff.
- (iv) A mixed IBM type central site and brand 'XYZ' minicomputer network will provide ideal exposure to staff for familiarisation and training.

#### RECOMMENDATION

The AAO should apply as soon as possible for a Certificate of Exception to tender for an IBM or IBM compatible central processing facility. If DOLGAS disapproves, then the AAO central hardware/software strategy should be altered to require compatibility (same hardware architecture and system software) of the central and network computer strategies.

#### CONSULTANT'S COMMENT

The AAO has not specified the operating system environment. This decision is essential prior to the request for tender (RFT) being released as it affects the entire software strategy of the central site.

#### RECOMMENDATION

The AAO has already taken advice to evaluate the alternative operating systems for IBM type processing environments. A decision will be made prior to RFT being released.

#### 4.2 Software Strategy

The AAO has identified application development software, text information storage and retrieval, CAAT's development software and some application packages.

#### CONSULTANT'S COMMENT

The AAO has not identified and included important operational system software. This software includes:

- Data & Resource Access Control System
- Data & Resource Monitoring & Accounting System
- Tape Management System
- Disk Management System
- Library (Source, Object, Executable Code) Management System
- User Type Enquiry & Report Ad Hoc Facilities.

#### RECOMMENDATION

AAO has already acted on advice to include these software items in their RFT and in their budget.

5. NETWORK STRATEGY

The AAO's network strategy is based on gateway to from the central host computer, (IBM or IBM compatible) to a minicomputer network to regional and sectional locations.

CONSULTANT'S COMMENT

Specific details of the exact type and style of network architecture are not documented. I believe this is appropriate, since it will give each vendor the opportunity to offer their 'best' solution. The AAO will be able to assess the diverse offering to determine the most appropriate type and style of network architecture that will satisfy their requirements.

5.1 Network Purpose

The primary purpose of the network is to distribute the ADP capabilities to the staff that require them. Since most of the facilities planned are professional support activities, this must involve direct access to the ADP facilities by regional office and sectional staff.

CONSULTANT'S COMMENT

The purpose of the network is sound and provide levels of contingency planning by distributing some of the computer power into the major regional offices. The failure of the central site or disruption in the data communication lines will not stop all processing, as limited processing will continue through the network mini-computers.

5.2 Network Structure

The network strategy involves two major elements i.e. personal computer workstations and data/communication processors.

CONSULTANT'S COMMENT

The strategy of using personal computers (desktop and portables) as workstations on the network is sound and will provide maximum support facilities to the users who will be involved in activities based on the central host system, regional mini-computers and personal computers. The same workstation will be able to support all the activities thus reducing equipment redundancy. It also recognises the continuing movement of audit staff as they perform their various audit assignments.

5.3 CSIRONET Network Connection (page 32 ADP Strategic Plan)

A CSIRONET network connection was planned as an interim measure until AAO could implement their own facilities. This strategy has been abandoned, as it is unnecessary with the current implementation schedule.

5.4 Office Automation Strategy

Word processing and the office automation tasks that require high levels of I/O will be based on the network mini-computers instead of the central host computer (reserved for application systems requiring central data base and CAAT's analysis of large data files).

CONSULTANT'S COMMENT

Office automation strategy is consistent with strategy being adopted by many other organisations. It considerably reduces the network communication load, reduces size of central host computer and provides high levels of service availability when system failures occur.

6. OPERATIONAL STRATEGY

The operational strategy is currently very limited, only covering off-site storage and the possibility of using CSIRO as a backup facility.

CONSULTANT'S COMMENT

This section could be greatly expanded. It is recognised that the exact hardware/software environment will not be known until a tender has been approved. However, general statements regarding the proposed type and style of computer operation for the central host computer and regional mini-computer installations would be appropriate.

RECOMMENDATION

The AAO undertake to develop a general operation strategy that will be enhanced to detail procedures when the exact hardware and software environment are known. This strategy should include:

- Access Control Strategy For Data & Resources
- Data & Resource Monitoring & Performance Planning
- Tape/Disk/Library Management Strategy
- Data Library strategy
- Data Administration (Definition & Documentation) Strategy
- Development & Maintenance Strategy
- Quality Assurance & Implementation Strategy

7. STAFFING STRATEGY

Staffing estimates have been estimated and documented within the ADP Strategic Plan.

CONSULTANT'S COMMENT

Staffing numbers appear to be similar to other computer installations of similar size and complexity to the AAO proposed installation. The number of technical and operational staff will largely depend on the hardware/software environment selected.

The acquisition of Data & Resource Monitoring & Performance Planning software and Tape/Disk/Library Management software can reduce the requirement for operation staff.

The selection of a fourth generation development environment (development dictionary/directory, data base management system, development tools, etc) will greatly impact development manpower requirements.

8. COST/BENEFIT CONSIDERATIONS

The stated estimated cost saving of the proposed system would be extremely difficult to estimate or verify. The intangible benefits of the proposed system are defensible and provide sufficient justification for the system.

8.1 Cost Model

The AAO has estimated costs for acquisition and operation for the duration of the ADP Strategic Plan. These are in Attachment C of the ADP Strategic Plan.

CONSULTANT'S COMMENT

The acquisition will depend on hardware and software environment selected. However, I believe the estimated costs for central host computer are unrealistically low. In particular, the system software and application software costs are too low for an IBM MVS-XA type processing environment (the most likely choice of operating system, if an IBM or IBM compatible host computer is installed).

The additional costs for data & resource access control software, data & access monitoring and performance planning, tape management, disk management, library (source, object, executable code) management, etc will have definitive payback through reduced operation staff support.

RECOMMENDATION

AAO should review their cost estimates by obtaining relevant costs from selected vendors. An itemised budget should be prepared listing each major hardware, software and service component. (refer to host computer cost budget below).

AUSTRALIAN AUDIT OFFICE

STATEMENT OF COST FOR ACQUISITION OF COMPUTER EQUIPMENT

COST COMPONENTS	86-87	87-88	88-89	89-90	TOTAL
<b>HOST COMPUTER HARDWARE COSTS</b>					
(1) CPU (IBM 4381-P12) 12MB Memory	600				600
Maintenance	6	13	13	13	45
(2) 10GB DASD Mass Storage	600				600
Maintenance	12	25	25	25	87
(3) Magnetic Tape Units (2 STD)	100				100
Maintenance	7	15	15	15	52
(4) 1200LPM Printer	50				50
Maintenance	3	6	6	6	21
(5) Operator Console	5				5
Maintenance	2	5	5	5	17
<b>HOST COMPUTER HARDWARE TOTALS</b>	<b>1385</b>	<b>64</b>	<b>64</b>	<b>64</b>	<b>1577</b>
<b>HOST COMPUTER SOFTWARE COSTS</b>					
(1) Operating System (MVS-XA/TSO)	75				75
Monthly Licence	125	250	250	250	875
(2) Data & Resource Access Control	40				40
Installation & Maintenance	5	5	5	5	20
(3) Data & Resource Monitoring	60				60
Installation & Maintenance	7	7	7	7	28
(4) Disk Management System	50				50
Installation & Maintenance	6	6	6	6	24
(5) Tape Management System	25				25
Installation & Maintenance	3	3	3	3	12
(6) Library (Code) Management	100				100
Installation & Maintenance	12	12	12	12	48
(7) DD/DBMS/4GL Environment	450				450
Installation & Maintenance	50	50	50	50	200
(8) CAAT's Development Tools	50				50
Installation & Maintenance	6	6	6	6	24
(9) Text Storage, Maint. & Retrieval	100				100
Installation & Maintenance	12	12	12	12	48
<b>HOST COMPUTER SOFTWARE TOTAL</b>	<b>1176</b>	<b>351</b>	<b>351</b>	<b>351</b>	<b>2229</b>

NOTE: above estimates do not include discounts that may be offered by vendors.



**REQUEST FOR TENDER (RFT) STRATEGY**

**FOR AUSTRALIAN AUDIT OFFICE**

**1. INTRODUCTION**

The Request For Tender (RFT) Strategy has been developed to provide an efficient and effective format for the Australian Audit Office to prepare a hardware, software and service specification for their ADP acquisition covering the requirements described in their recent ADP Strategic Plan. The RFT Strategy is a departure from the Department Of Local Government and Administrative Service's (DOLGAS) recommended format as documented within 'PROFORMA REQUEST FOR TENDER - M' (Version March 1985).

The RFT Strategy includes the same information as the DOLGAS recommended format, but it has been primarily rearranged and restructured the RFT sections. The justification for the restructuring of the RFT sections is to consolidate the relevant information for part tenders. This was considered necessary due to the large number of part tenders (over 20 part tenders for specific categories of hardware, software and services) and the complexity of the overall ADP acquisition.

The objectives of the Request For Tender Strategy include:

**(1) REDUCE EFFORT IN PREPARING RFT**

The structure of the RFT lends itself to be developed, documented and reviewed as individual part tenders. DOLGAS's standard provisions and clauses have been maintained, but each part tender has been developed as a complete section, instead the relevant information being split up throughout the RFT PROFORMA sections.

**(2) INCREASE QUALITY OF RFT INFORMATION**

Each part tender section can be prepared by staff who are expert or highly skilled in the type of hardware, software and services being requested by the part tender. This reduces the level of communication required to document the RFT for an ADP acquisition of the complexity required by the Australian Audit Office.

**(3) IMPROVE COMMUNICATION WITH VENDERS**

Specialist vendors (many of which are Australian manufacturers) are more easily able to extract the areas of the overall RFT that are relevant to their product and service offerings. Instead of extracting portions from each general section of the DOLGAS PROFORMA RFT, they will be able to focus on the general sections and the individual part tender specifications for which they can tender solutions. This will save them considerable time and reduce the likelihood of them missing information or requirements relevant to their tender preparation.

The presentation of a pre-tender conference will also improve communications. It will cover the major requirements of the RFT and Tender process and provide an open forum for the vendors to ask questions and receive immediate answers from the Evaluation Team.

- (4) INCREASE EFFICIENCY AND EFFECTIVENESS OF EVALUATION PROCESS**  
The Request For Tender Strategy not only includes the specifications for the required hardware, software and services, but also includes a Tender Strategy that is to be used by the vendors for preparing their tenders. Since the Tender Strategy requires a formal structured tender format, considerable time and effort can be saved by the Evaluation Team in finding and comparing similar information in competitive tenders.

A formal structured tender proposal lends itself to an evaluation process supported by personal computer system facilities. These facilities can considerably reduce the Evaluation Team's clerical efforts and greatly increase their ability to assess and compare competitive solutions.

- (5) REDUCES WASTED EFFORT BY VENDERS AND EVALUATION TEAM**  
Vendors are informed within the RFT of the evaluation methodology and basic evaluation criteria. This will enable them to more closely analyse the suitability of the products and services in relation to the Australian Audit Office's requirements. They can choose not to tender if they believe the evaluation criteria is unfavourable to their particular product range; this reduces the effort of preparing tenders with low probability of success and also reduces the Evaluation Team's efforts since there will be fewer tenders but tenders of a higher relevance to assess.

2. RFT STRATEGY'S FORMAT

2.1 CROSS REFERENCE OF AAO RFT FORMAT AND DOLGAS PROFORM - M

TABLE OF CONTENTS

AAO RFT FORMAT

DOLGAS PROFORMA

PART I - BASIC TENDERING

1. SUMMARY OF REQUIREMENTS

1. SUMMARY OF REQUIREMENTS

NOTE: Both RFT formats and contents are identical for this section.

- |                               |                               |
|-------------------------------|-------------------------------|
| 1.1 Scope Of The Requirements | 1.1 Scope Of The Requirements |
| 1.2 Background Of Department  | 1.2 Background Of Department  |

2. CONDITIONS OF TENDER

2. CONDITIONS OF TENDER

NOTE: Both RFT formats and contents are identical for this section.

- |   |   |
|---|---|
| 2.1 Instructions To Tenderers   | 2.1 Instructions To Tenderers   |
| 2.2 Minimum Information For Formal Tender                                       | 2.2 Minimum Information For Formal Tender                                       |
| 2.3 Further Information   | 2.3 Further Information   |
| 2.4 Selection Criteria  | 2.4 Selection Criteria  |
| 2.5 Pricing   | 2.5 Pricing   |
| 2.6 Tender Validity Period  | 2.6 Tender Validity Period  |
| 2.7 Lease or Purchase   | 2.7 Lease or Purchase   |
| 2.8 Pat Tenders   | 2.8 Pat Tenders   |
| 2.9 New and Used Equipment  | 2.7 New and Used Equipment  |
| 2.10 Alternate Tenders  | 2.10 Alternate Tenders  |
| 2.11 Conversion   | 2.11 Conversion   |
| 2.12 Right To Vary Configuration Tended   | 2.12 Right To Vary Configuration Tended   |
| 2.13 Substitution Of New Generation of Equipment Offered By Successful Tenderer | 2.13 Substitution Of New Generation of Equipment Offered By Successful Tenderer |
| 2.14 Guarantee Of Due Performance   | 2.14 Guarantee of due Performance   |
| 2.15 Maintenance  | 2.15 Maintenance  |
| 2.16 Site Preparation   | 2.16 Site Preparation   |
| 2.17 Preference to Australian-Made Goods - Australian and New Zealand Content   | 2.17 Preference to Australian-Made Goods - Australian and New Zealand Content   |
| 2.18 Offsets Program  | 2.18 Offset Programs  |
| 2.19 Freedom of Information   | 2.19 Freedom of Information   |
| 2.20 Disclosure of Information  | 2.20 Disclosure of Information  |
| 2.21 Tenderer To Inform Themselves  | 2.21 Tenderer To Inform Themselves  |
| 2.22 Execution of Formal Agreement  | 2.22 Execution of Formal Agreement  |

PART II - BASIS OF CONTRACT

3. CONDITIONS OF CONTRACT -----> 3. CONDITIONS OF CONTRACT

NOTE: Both RFT formats and contents are identical for this section.

- |  |  |
|--|--|
| 3.1 Definitions                                  | 3.1 Definitions                                  |
| 3.2 Name and Scope of Contract                   | 3.2 Name and Scope of Contract                   |
| 3.3 Period of the Contract                       | 3.3 Period of the Contract                       |
| 3.4 Price Basis                                  | 3.4 Price Basis                                  |
| 3.5 Payment                                      | 3.5 Payment                                      |
| 3.6 Special Software Development                 | 3.6 Special Software Development                 |
| 3.7 Responsibility of Contractor                 | 3.7 Responsibility of Contractor                 |
| 3.8 Co-operation Between Contractors             | 3.8 Co-operation Between Contractors             |
| 3.9 Progress Reporting                           | 3.9 Progress Reporting                           |
| 3.10 Contractor's Personnel                      | 3.10 Contractor's Personnel                      |
| 3.11 Worker's Compensation Insurance             | 3.11 Worker's Compensation Insurance             |
| 3.12 Access To Contractor's Premises             | 3.12 Access To Contractor's Premises             |
| 3.13 Access to Installation Site and Access Date | 3.13 Access to Installation Site and Access Date |
| 3.14 Delivery                                    | 3.14 Delivery                                    |
| 3.15 Packing                                     | 3.15 Packing                                     |
| 3.16 Duty Free Entry                             | 3.16 Duty Free Entry                             |
| 3.17 Sales Tax Exception                         | 3.17 Sales Tax Exception                         |
| 3.18 Substitution of New Generation of Equipment | 3.18 Substitution of New Generation of Equipment |
| 3.19 Site Preparation and Installation           | 3.19 Site Preparation and Installation           |
| 3.20 Acceptance Procedures                       | 3.20 Acceptance Procedures                       |
| 3.21 Warranty                                    | 3.21 Warranty                                    |
| 3.22 Title and Risk                              | 3.22 Title and Risk                              |
| 3.23 Maintenance                                 | 3.23 Maintenance                                 |
| 3.24 Software Licences                           | 3.24 Software Licences                           |
| 3.25 Intellectual Rights                         | 3.25 Intellectual Rights                         |
| 3.26 Disclosure Of Information                   | 3.26 Disclosure Of Information                   |
| 3.27 Secrecy                                     | 3.27 Secrecy                                     |
| 3.28 Patent Rights                               | 3.28 Patent Rights                               |
| 3.29 Insurance Release & Indemnity               | 3.29 Insurance Release & Indemnity               |
| 3.30 Contractor Not To Commit Trespass           | 3.30 Contractor Not To Commit Trespass           |
| 3.31 Liquidated Damages                          | 3.31 Liquidated Damages                          |
| 3.32 Excusable Delay and Default                 | 3.32 Excusable Delay and Default                 |
| 3.33 Arbitration                                 | 3.33 Arbitration                                 |
| 3.34 Determination                               | 3.34 Determination                               |
| 3.35 Assignment                                  | 3.35 Assignment                                  |
| 3.36 Sub-Contractor                              | 3.36 Sub-Contractor                              |
| 3.37 Offsets Arrangements                        | 3.37 Offsets Arrangements                        |
| 3.38 Australian Content                          | 3.38 Australian Content                          |
| 3.39 Mistakes in Information                     | 3.39 Mistakes in Information                     |
| 3.40 Conditions Not To Be Waived                 | 3.40 Conditions Not To Be Waived                 |
| 3.41 Precedence of Documentation                 | 3.41 Precedence of Documentation                 |
| 3.42 Previous Understandings                     | 3.42 Previous Understandings                     |
| 3.43 Applicable Laws                             | 3.43 Applicable Laws                             |
| 3.44 Commonwealth Addresses                      | 3.44 Commonwealth Addresses                      |
| 3.45 Interpretation                              | 3.45 Interpretation                              |

PART III - OVERVIEW OF SYSTEM REQUIREMENTS

4. SCOPE OF THE REQUIREMENT -----> 4. SCOPE OF REQUIREMENT

NOTE: Both RFT formats and contents are identical for this section.

- 4.1 Overview of ADP Strategic Plan
- 4.2 List of Acceptable Part Tenders

5. PRESENT SYSTEM -----> 5. PRESENT SYSTEM

NOTE: Both RFT formats and contents are identical for this section.

PART IV - ACCEPTABLE PART TENDER

6 - 99 PART TENDERS (refer to section 3 for list of part tenders)

Each of the following subsections will be contained in the Part Tender sections and correspond to sections of the DOLGAS PROFORMA Tender.

- n.1 Proposed Environment
  - n.1.1 Description -----> 6. PROPOSED SYSTEM
    - What
    - Why
    - When
    - Where
  - n.1.2 Workload & Other Statistics -----> 7. WORKLOAD VOLUMES
  - 6.1.3 Ergonomic and Environmental -----> 22. ERGONOMIC REQUIREMENTS
    - Considerations
  - n.1.4 Security Considerations -----> 11. SECURITY
  - n.2 Requirements -----> 8. HARDWARE or
    - n.2.1 Technical Requirements 9. SOFTWARE or
    - n.2.2 Non-Technical Requirements 10. COMMUNICATION FACILITIES
  - n.3 Questionnaire -----> 21. QUESTIONNAIRE
  - n.4 Evaluation Criteria -----> 18. EVALUATION METHODOLOGY
    - n.4.1 Evaluation Model's Parameters
      - Technical Compliance Points
      - Non-Technical Compliance Points
      - Cost Comparison Model Points & Components
      - Risk/Exposure Points & Scenarios
    - n.4.2 Evaluation Detail Checking -----> 13. BENCHMARKS
      - Benchmarks
      - Demonstrations
      - Reference Checking
  - n.5 Supply, Installation and -----> 14. ACCEPTANCE PROCEDURES &  
Acceptance 12. SITE PREPARATION AND  
INSTALLATION  
(Relevant Subsections & Clauses)
  - n.6 Maintenance -----> 20. MAINTENANCE  
(Relevant Subsections & Clause)

Request For Tender Strategy By David Angeloro (1 April, 86)

APPENDICES

- A. TENDER STRATEGY  
(refer to TENDER STRATEGY by David Angeloro 1st April, 1986)  
Contains instructions on formal structure and instructions the vendors are required to follow when submitting a combined or part tender.
- B. EVALUATION METHODOLOGY  
(refer to EVALUATION METHODOLOGY by David Angeloro 21st March, 1986)
- C. GENERAL MAINTENANCE CONDITIONS  
(refer to DOLGAS PROFORMA section 20 MAINTENANCE)
- D. ACCEPTANCE  
(refer to DOLGAS PROFORMA section 14 ACCEPTANCE)
- E. SCHEDULE OF PRICES  
(refer to DOLGAS PROFORMA appendix A - SCHEDULE OF PRICES)
- F. NOTES ON OFFSETS  
(refer to DOLGAS PROFORMA appendix B - NOTES ON OFFSETS)
- G. GUIDELINES ON CALCULATING AUSTRALIAN AND NEW ZEALAND CONTENT  
(refer to DOLGAS PROFORMA appendix C - GUIDELINES ON CALCULATING AUSTRALIAN AND NEW ZEALAND OFFSETS)
- H. PROFORMA BANK GUARANTEE  
(refer to DOLGAS PROFORMA appendix D - PROFORMA BANK GUARANTEE)

Request For Tender Strategy By David Angeloro (1 April, 86)

3. LIST OF ACCEPTABLE PART TENDERS FOR AAO

Each of the following sections are a part tender which a vendor can tender a solution. Two or more part tenders may be combined and offered as a combined tendered solution.

3.1 HOST COMPUTER FACILITY

NOTE: Certificate of Exemption (C of E) has been submitted to DOLGAS for an IBM or IBM Compatible solution.

- Central Processing Unit (CPU) (including dynamic memory)
- Operator Console
- Mass Storage (Disk Units & Controllers)
- Magnetic Tape Devices (including Controller)
- Medium Speed Operations Printer
- Services: (1) Installation and Integration  
(2) Acceptance Testing  
(3) 1st Year's Maintenance

CONTRACT SUPPLY PERIOD: 1 Year

3.2 COMMUNICATION FRONTEND or GATEWAY

The hardware and software required to interface the IBM/IBM Compatible host computer to the mini computer network.

CONTRACT SUPPLY PERIOD: 1 Year

3.3 HOST COMPUTER OPERATING SYSTEM & UTILITIES

The host computer operating system, utilities and 3rd generation development tools (compilers, linkage editors, etc).

NOTE: Decision pending on whether a MVS or VM operating system environment is required.

CONTRACT SUPPLY PERIOD: 1 Year

3.4 DATA & RESOURCE ACCESS CONTROL SYSTEM

The host computer software that provides access control for data resources (files, data bases, etc) and resources (disks, tapes, visual display units, programs, etc). This software should support preventative, detective, documentive and administrative data security support facilities.

CONTRACT SUPPLY PERIOD: 1 Year

3.5 DATA & RESOURCE MONITORING SYSTEM

The host computer software that provides for data and resource usage to be tracked, recorded, analysed and monitored over time. An additional feature is the accounting and charging of user for their use of data and resources.

CONTRACT SUPPLY PERIOD: 1 Year

Request For Tender Strategy By David Angeloro (1 April, 86)

3.6 DISK MANAGEMENT SYSTEM

The host computer disk management software that supports the control, distribution, archiving, back-up, deletion and general administration of the hundreds (probably thousands) of data files store permanently and temporarily on the disk mass storage devices.

CONTRACT SUPPLY PERIOD: 1 Year

3.7 TAPE MANAGEMENT SYSTEM

The host computer tape management software that supports the control, distribution, archiving, storage & locating, scratching and general administration of the hundreds (possibly thousands) of magnetic tapes used for archiving, backing-up, storing, recovery logging, etc data.

CONTRACT SUPPLY PERIOD: 1 Year

3.8 LIBRARY (Source Code, Object Code, Executable Code) MANAGEMENT SYSTEM

The host computer library software for the control, addition, deletion, updating, change control, tracking and documenting of source code libraries and program/subprograms, object code and executable code.

CONTRACT SUPPLY PERIOD: 1 Year

3.9 DATA DIRECTORY, DATA BASE MANAGEMENT AND 4th GENERATION DEVELOPMENT TOOLS

The host computer software that supports a highly productive application development environment including datadictionary/directory, data base management and 4th generation development tools for data processing specialists and non-technical users.

CONTRACT SUPPLY PERIOD: 1 Year

3.10 CAAT's (Computer Assisted Audit Techniques) Development Tools

The host computer's generalised audit software and development tools create audit tools that can support the Office's Auditors in the performance of their duties.

CONTRACT SUPPLY PERIOD: 1 Year

3.11 TEXT STORAGE, MAINTENANCE AND RETRIEVAL SYSTEM

The host computer's software that supports the storage, maintenance and retrieval of textual information that is generally unsuitable for storage through a data base management system.

CONTRACT SUPPLY PERIOD: 1 Year

Request For Tender Strategy By David Angeloro (1 April, 86)

### 3.12 DATA COMMUNICATION SYSTEM

The host computer's software that controls and manages the networking facilities and software that operates through the telecommunication network.

NOTE: Depending on the network architecture and several other technical considerations this software may not be required.

CONTRACT SUPPLY PERIOD: 1 Year

### 3.13 NETWORK HARDWARE & COMMUNICATION SOFTWARE

The network architecture consisting of essential hardware and software to produce integrated network solution to support distributed office automation and processing.

- Communication Gateway To Host Computer
- Central Processing Node Hardware
- Regional Node Hardware
- Sectional Node Hardware
- Communication and Operating System Software

CONTRACT SUPPLY PERIOD: 2 Year

### 3.14 COMMUNICATION DEVICES

The network control devices that support the interconnection of workstations, printers and other hardware to the network.

- Modems
- Multiplexors
- Port Contenders
- Dial Up Facilities (Auto-Answer - Auto-Call)
- etc

CONTRACT SUPPLY PERIOD: 2 Year

### 3.15 ENCRYPTION & NETWORK SECURITY DEVICES

The network devices that support model security through various advanced technology techniques.

- Communication Line Encryption Devices
- Call-Back Facilities
- etc

CONTRACT SUPPLY PERIOD: 2 Year

### 3.16 WORKSTATIONS

Data processing, office automation and personal computing workstation (terminals) that will interface and operate through the network communications at a host and/or regional and/or sectional and/or sectional level.

CONTRACT SUPPLY PERIOD: 2 Year

### 3.17 PRINTERS

Printers, plotters and other hardcopy devices that will be connected to the network to support the data processing, office automation and personal computing activities.

CONTRACT SUPPLY PERIOD: 2 Year

### 3.18 WORD PROCESSING

The software available for the network nodes (central, regional, sectional and professional) that will support word processing, spell checking, online thesaurus, etc for the creation, maintenance and production of textual documents.

CONTRACT SUPPLY PERIOD: 1 Year

### 3.19 FINANCIAL MODELING (SPREADSHEET) SOFTWARE

The software available for network nodes (central, regional, sectional and professional) that will support financial modeling and another spreadsheet type activities.

CONTRACT SUPPLY PERIOD: 1 Year

### 3.20 OFFICE AUTOMATION SOFTWARE

The software available for network nodes (central, regional, sectional and professional) that will support office automation activities including electronic mail, electronic bulletin boards, record management, etc.

CONTRACT SUPPLY PERIOD: 1 Year

### 3.21 NETWORK CAAT's (Computer Assisted Audit Technique) Development Tools

The software available for network nodes (central, regional, sectional and professional) that consist of generalised audit software and development tools to create audit tools that can support the Office's Auditors in the performance of their duties.

CONTRACT SUPPLY PERIOD: 1 Year

### 3.22 EXPRESSIONS OF INTEREST FOR APPLICATION SOFTWARE

The Office would like vendors to specify the availability and general descriptive details (without going through the costly tender preparation procedure) for application software required in the future.

- Library (Books, Documents, etc) Management System
- Asset Management System
- Personnel and Skill Register Management System

## 9. DATA & RESOURCE ACCESS CONTROL SYSTEM

The Data & Resource Access Control (D&RAC) System administers access to the data (files, data bases, programs, etc) and the resources (disks, tapes, visual display units, etc) so only authorised users can access the organisation's computer based data and resources. The Data & Resource Access Control system should support user identification, assignment of access rules, restriction of data and resource access to only authorised users, recording of failed and successful access attempts, and general data security administration and reporting.

### 9.1 PROPOSED ENVIRONMENT

#### 9.1.1 Description

The Data & Resource Access Control System will operate in the central host computer's processing environment. This will be an IBM or IBM compatible hardware environment operating an MVS-XA type operating system. Other system support software will include Data & Resource Monitoring System, Disk Management System, Tape Management System, Library (Source, Object, Executable Code) Management System, Data Directory/Data Base Management/4th Generation Development Tools for Data Processing and Non-Technical Users, CAAT's (Computer Assisted Audit Technique) Development Tools, Text Storage-Maintenance-Retrieval Management System and Data Communication System. Applications will be primarily operated through local and remote data communication network.

The Australian Audit Office (AAO) will be auditing (using developed CAAT's software) data files from various government departments and statutory bodies, as well as processing their own data from internal systems. Since much of the external data may be sensitive, data security of the data resources is essential.

The Australian Audit Office's role as external auditor to the commonwealth government means that it would be appropriate for the Office to establish a model data security environment.

The Data & Resource Access Security System will be implemented at the earliest possible period. This will be as soon as the hardware and operating system have been acceptance tested.

The Data & Resource Access Control System will be centrally administered from the Australian Audit Offices central computer facility located in Civic, ACT.

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#### 9.1.2 Workloads & Other Statistics

There are approximately 600 staff within the Australian Audit Office. Even though initially all staff will not have access to the computer facilities, ultimately a large portion will utilise the computer facilities for a variety of data processing, professional and office automation type activities.

Initially there will be 100 workstations connected to the network. These will consist of data processing visual display units, word processing workstations and personal computers.

There will be approximately 10 GBytes of mass storage. It is extremely difficult to determine the number of files and data bases that will be maintained. However there will be approximately 4 disk units. In addition, there will be two magnetic tape drives used for backup, recovery logging, archiving and data transfer with other government departments.

#### STATISTICAL SUMMARY

600	:Potential Users
10GB	:Mass Storage
4	:Disk Drives
2	:Tape Units

#### 9.1.3 Ergonomic and Other Environmental Considerations

(not applicable)

#### 9.1.4 Security Considerations

The Australian Audit Office intends to audit data files and data bases from government departments using CATTs (Computer Assisted Audit Techniques). This will be performed primarily on the AAO's cen 1 host (IBM or IBM compatible) processing environment. The AAO Audit staff will become custodian for the data while it is away from the owner Department. The data will be transferred by magnetic tape to AAO's host computer and the data will be stored on magnetic tape and mass storage disks. This data will require a high level of data security with access restricted to the authorised Auditors assigned to the particular audit project. Much of the data is highly confidential.

In addition, the Australian Audit Office's role as the government's external auditors makes it appropriate that the AAO establish a model data security environment. The AAO's staff often reviews and comments on governmental security and therefore it is essential that the AAO provide a model for data and resource security implementation and administration.

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## 9.2 REQUIREMENTS

### 9.2.1 Technical Requirements

- 9.2.1.1 It is mandatory for the D6RAC system to operate in an IBM or IBM compatible processing environment operating under MVS-XA and TSO type operating system software.
- 9.2.1.2 It is mandatory for the D6RAC system to operate in batch, timeshare and online modes of operation.
- 9.2.1.3 It is mandatory that the D6RAC system undertakes to operate under and supports the latest announced release of the operating system.
- 9.2.1.4 It is highly desirable that the D6RAC system interfaces (refer to footnote \*1) with the selected Data & Resource Monitoring System.
- 9.2.1.5 It is highly desirable that the D6RAC system interfaces (refer to footnote \*1) with the selected Disk Management System.
- 9.2.1.6 It is highly desirable that the D6RAC system interfaces (refer to footnote \*1) with the selected Tape Management System.
- 9.2.1.7 It is highly desirable that the D6RAC system interfaces (refer to footnote \*1) with the selected Library (Source, Object, Executable Code) Management System.
- 9.2.1.8 It is highly desirable that the D6RAC system interfaces (refer to footnote \*1) with the selected Data Directory/Data Base Management/4th Generation Development Tool System.
- 9.2.1.9 It is highly desirable that the D6RAC system interfaces (refer to footnote \*1) with the selected CAAT's (Computer Assisted Audit Techniques) Development Tools.
- 9.2.1.10 It is highly desirable that the D6RAC system interfaces (refer to footnote \*1) with the selected Text Storage, Maintenance and Retrieval System.

FOOTNOTE: \*1 Interfaces refers to the ability of the D6RAC system to control access to the software's functions and data; also to complement any data security facilities that are implemented within the software system.

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- 9.2.1.11 It is highly desirable that the D6RAC system interfaces (refer to footnote \*1) with the selected Data Communication System.
- 9.2.1.12 It is highly desirable that the D6RAC system interfaces (refer to footnote \*1) with applications developed using the selected Data Directory/Data Base Management/4th Generation Development Tools.
- 9.2.1.13 It is highly desirable that the D6RAC system interfaces (refer to footnote \*1) with CAAT's developed using the selected CAAT's Development Tools.
- 9.2.1.14 It is highly desirable that the D6RAC system does not require modification to the Operating System, Data & Resource Monitoring System, Disk Management System, Tape Management System, Library (Source, Object, and Executable Code) Management System, Data Directory/Data Base Management/4th Generation Development Tools. CAAT's Development Tools, Text Storage-Maintenance-Retrieval Management System or Data Communication System.  
NOTE: Modifications refer to making changes to the actual code (source, object, executable) that must be performed by the AAO's System Programmer and/or changes to the actual code that are not supported by the software vendors.
- 9.2.1.15 It is highly desirable that the D6RAC system requires no modifications to be made to the operating JCL of application programs.
- 9.2.1.16 It is desirable that the D6RAC system to operate at different levels of security to allow for phased implementation. Phase one may only log access patterns; phase two (learning period) may require User-Ids and Passwords but violations logged but permitted; phase three would provide full data security.
- 9.2.1.17 It is optional that the D6RAC system provide exits for the addition of missing or lacking features or to ensure the enforcement of certain standards.
- 9.2.1.18 It is mandatory that the D6RAC system protects DASD datasets.
- 9.2.1.19 It is mandatory that the D6RAC system protects magnetic tape datasets without the addition of code that is unsupported by the vendor.

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- 9.2.1.20 It is highly desirable that the D&RAC system protects DASD volumes without the addition of code that is unsupported by the vendor.
- 9.2.1.21 It is highly desirable that the D&RAC system protects magnetic tape volumes without the addition of code that is unsupported by the vendor.
- 9.2.1.22 It is highly desirable that the D&RAC system protects TSO commands without the addition of code that is unsupported by the vendor.
- 9.2.1.23 It is mandatory that the D&RAC system protects specific programs and/or operating system utilities without the addition of code that is unsupported by the vendor.
- 9.2.1.24 It is desirable that the D&RAC system protects network terminals without the addition of code that is unsupported by the vendor.
- 9.2.1.25 It is highly desirable that the D&RAC system protects online transactions without the addition of code that is unsupported by the vendor.
- 9.2.1.26 It is desirable that the D&RAC system protects VTORGs without the addition of code that is unsupported by the vendor.
- 9.2.1.27 It is desirable that the D&RAC system protects catalogs (VSAM, etc) without the addition of code that is unsupported by the vendor.
- 9.2.1.28 It is optional that the D&RAC system protects other types of data and resources without the addition of code that is unsupported by the vendor.
- 9.2.1.29 It is desirable that the D&RAC system supports the definition of default rules to protect generic classes of data and/or resources. This will greatly reduce the coding of access rules.
- 9.2.1.30 It is desirable that the D&RAC system supports the overriding of default access rules for individual circumstances without removing the general application of the default access rule.

- 9.2.1.31 It is highly desirable that the D&RAC system protects a new data file or resource by default even though access rules have not been defined i.e. access is restricted to the creator until access rules are defined indicating other authorized access.
- 9.2.1.32 It is mandatory that the D&RAC system supports the definition of data or resource access rules for individual users.
- 9.2.1.33 It is highly desirable that the D&RAC system supports the definition of data or resource access rules for groups of users.
- 9.2.1.34 It is mandatory that the D&RAC system supports the definition of data or resource access rules for specific jobs and/or programs.
- 9.2.1.35 It is mandatory that the D&RAC system supports the definition of data or resource access rules allowing access to users and/or groups of users and/or jobs/programs.
- 9.2.1.36 It is desirable that the D&RAC system supports the definition of data or resource access rules denying access to users and/or user groups and/or jobs/programs.
- 9.2.1.37 It is mandatory that the D&RAC system identifies each user by User-Id and Password that are unique for the user; that the User-Id is used to record the user's access activity (failed and successful) on security log.
- 9.2.1.38 It is desirable that the D&RAC system support the optional identification of individual users as members of users groups (auditors, operators, clerical support staff, etc).
- 9.2.1.39 It is highly desirable that the D&RAC system supports various levels of access i.e. read only, add, delete, update and combinations of the above access levels.
- 9.2.1.40 It is highly desirable that the D&RAC system can not be bypassed by any authorized programs and/or operating system utilities.
- 9.2.1.41 It is desirable that the D&RAC system can be overridden in an emergency (e.g. D&RAC system malfunction, contingency activities at alternate backup site, etc).



- 9.2.1.42 It is highly desirable that the D&RAC system supports the decentralisation and/or delegation of selected data security administration activities i.e. changing of passwords responsibility of individual users, etc.
- 9.2.1.43 It is mandatory that the D&RAC system supports the security administration reporting i.e. access rules for specific users, users that can access specific data files or resources, etc.
- 9.2.1.44 It is mandatory that the D&RAC system supports reporting of the security activity log i.e. list of users of specific data files or resource, list of usage by specific user, list of activity for a specific time period, etc.
- 9.2.1.45 It is highly desirable that the D&RAC system supports an ad hoc query and/or report generation facility to produce security administration reports.
- 9.2.1.46 It is mandatory that the D&RAC system supports a complete log (audit trail with date/time stamp) of all changes to user-ids, passwords (encrypted), access rules, etc..
- 9.2.1.47 It is mandatory that the D&RAC system supports access control over its own data sets and programs.
- 9.2.1.48 It is mandatory that the D&RAC system logs all failed attempts to access data and/or resources to security log.
- 9.2.1.49 It is highly desirable that the D&RAC system logs all attempts (failed and successful) to access data and/or resources to security log.
- 9.2.1.50 It is desirable that the D&RAC system supports the realtime notification of serious data security violations to a security console, etc.
- 9.2.1.51 It is desirable that the D&RAC system supports levels of security violations that may trigger different responses.
- 9.2.1.52 It is mandatory that the D&RAC system logs the following information to the security log: User-Id, Date & Time, Resource Accessed.

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- 9.2.1.53 It is highly desirable that the D&RAC system logs the following information to the security log: Terminal in use, Level of Access.
- 9.2.1.54 It is highly desirable that the D&RAC system supports restoration-recovery-restart of its security log in the case of a system or other type of failure.
- 9.2.1.55 It is highly desirable that the D&RAC system requires a low level of system resource and does not adversely affect processing performance.
- 9.2.1.56 It is highly desirable that the D&RAC system supports the same access rules for different generations of a dataset, but that these can be individually overridden.
- 9.2.2 Non-Technical Requirements  
\*\*\*\*\*
- 9.2.2.1 It is mandatory that the D&RAC system have technical and user reference manuals written in english that are easy and effective to utilise.
- 9.2.2.2 It is mandatory that the D&RAC system be currently supported in Australia.
- 9.2.2.3 It is highly desirable that the D&RAC system be currently supported in Canberra, ACT.
- 9.2.2.4 It is desirable that the D&RAC system be currently in use within commonwealth government departments.
- 9.2.2.5 It is highly desirable that the D&RAC system can be implemented with considerable time and effort by highly technical professional staff.
- 9.2.2.6 It is highly desirable that the D&RAC system is easy to learn to operate.
- 9.2.2.7 It is desirable that the D&RAC system have video training courses available in Australia.
- 9.2.2.8 It is desirable that the D&RAC system support user administration of their own passwords i.e. they are responsible for changing the password within a specific time period.

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9.3 QUESTIONNAIRES

9.3.1 DATA & RESOURCE ACCESS CONTROL SYSTEM PROFILE

- 9.3.1.1 Name.....
- 9.3.1.2 Release..... Version..... Modification.....
- 9.3.1.3 Description.....  
.....  
.....
- 9.3.1.4 Manufacturer.....  
Address.....  
.....  
Telephone ( ) ..... Telex.....
- 9.3.1.5 Sales Vendor.....  
Address.....  
.....  
Telephone ( ) ..... Telex.....
- 9.3.1.6 Sales Contact..... Extension.....  
Position.....
- Technical Contact..... Extension.....  
Position.....
- 9.3.1.7 Date First Released..... Where.....
- 9.3.1.8 How many releases and/or versions have been delivered to user sites?  
.....:Since January 1981 .....:Last 18 Months
- 9.3.1.9 Number of Users? .....Australia .....Worldwide

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9.3.2 SOFTWARE INSTALLATION

9.3.2.1 What IBM and IBM Compatible ranges and models does the software currently operate?

- ...Yes ...No IBM
- ...Yes ...No Amdahl
- ...Yes ...No Fujitsu (FACOM)
- ...Yes ...No NAS
- ...Yes ...No Nixdorf
- ...Yes ...No Others.....

9.3.2.2 What operating systems does the software currently operate?

- ...Yes ...No IBM's MVS-KA
- ...Yes ...No IBM's VM-QMS
- ...Yes ...No IBM's DOS/VSE
- ...Yes ...No FACOM's OS/IV
- ...Yes ...No Nixdorf's NIDOS
- ...Yes ...No Others.....

9.3.2.3 ...Yes ...No Are there any non-IBM or IBM compatible hardware and operating system combinations on which there are operational versions of the software?

9.3.2.4 ...Yes ...No Are there any personal computer support facilities? If yes, please describe the PC facilities and the personal computer and operating system combinations on which they operate?

9.3.2.5 ...Yes ...No Are there any peripherals, CPU's or software features not supported by the release/version of the tendered software?

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- 9.3.2.6 ...Yes ...No When the software is delivered, does it require system generation to tailor it to a particular hardware/software system configuration? If yes, describe the procedure required for system generation, including the time, resources and effort required.
- 9.3.2.7 When new releases and/or versions and/or modifications of the software are supplied, how are they implemented?
- ...Yes ...No Complete New Software Copy?
- ...Yes ...No Code Patches or Changes On Tape Ready For Automatic or Semi-Automatic Implementation?
- ...Yes ...No Documented Code Patches or Changes Requiring Manual Implementation?
- 9.3.2.8 ...Yes ...No Does a user have the option not to implement new releases/versions of the software? If yes, how many months will the old release/version remain supported?
- 9.3.2.9 ...Yes ...No Can a new release/version be tested and implemented without operational interruption to the use of the system? If yes, describe how the testing can be performed? If no, describe the type and duration of the operational interruption?
- 9.3.2.10 How much memory does the software require to operate efficiently?
- REAL .....Maximum .....Minimum .....Average
- VIRTUAL .....Maximum .....Minimum .....Average
- 9.3.2.11 .....KBytes How much mass storage (DASD) space is required to store all the software and its utilities?
- 9.3.2.12 .....Staff How many technical EDP professionals are required to support the installation, monitoring, maintenance and other activities associated with the software? Describe the type of staff required and the activities they would perform.

- 9.3.2.13 List the name, short description of its function(s), whether it is required to be resident in memory (yes, no, optional) and the size for each module and program.

Name	Description	Resident	Size
(1).....	.....	.....	.....
(2).....	.....	.....	.....
(3).....	.....	.....	.....
(4).....	.....	.....	.....
(5).....	.....	.....	.....
(6).....	.....	.....	.....
(7).....	.....	.....	.....
(8).....	.....	.....	.....
(9).....	.....	.....	.....
(10).....	.....	.....	.....
(11).....	.....	.....	.....
(12).....	.....	.....	.....
(13).....	.....	.....	.....
(14).....	.....	.....	.....
(15).....	.....	.....	.....
(16).....	.....	.....	.....
(17).....	.....	.....	.....
(18).....	.....	.....	.....
(19).....	.....	.....	.....
(20).....	.....	.....	.....
(21).....	.....	.....	.....
(22).....	.....	.....	.....
(23).....	.....	.....	.....
(24).....	.....	.....	.....
(25).....	.....	.....	.....

9.3.2.14 List the name, short description of its function(s) including who it is designed to support and the total number of pages for each reference manual or other documentation available for the software system.

Name	Description	Size
(1).....	.....	.....
(2).....	.....	.....
(3).....	.....	.....
(4).....	.....	.....
(5).....	.....	.....
(6).....	.....	.....
(7).....	.....	.....
(8).....	.....	.....
(9).....	.....	.....
(10).....	.....	.....
(11).....	.....	.....
(12).....	.....	.....
(13).....	.....	.....
(14).....	.....	.....
(15).....	.....	.....
(16).....	.....	.....
(17).....	.....	.....
(18).....	.....	.....
(19).....	.....	.....
(20).....	.....	.....
(21).....	.....	.....
(22).....	.....	.....
(23).....	.....	.....
(24).....	.....	.....
(25).....	.....	.....

9.3.2.15 List the name, short description of its function(s) including who it is designed to train and the total number of days for each training course and/or video available for the software system.

Name	Description	Days
(1).....	.....	.....
(2).....	.....	.....
(3).....	.....	.....
(4).....	.....	.....
(5).....	.....	.....
(6).....	.....	.....
(7).....	.....	.....
(8).....	.....	.....
(9).....	.....	.....
(10).....	.....	.....
(11).....	.....	.....
(12).....	.....	.....
(13).....	.....	.....
(14).....	.....	.....
(15).....	.....	.....
(16).....	.....	.....
(17).....	.....	.....
(18).....	.....	.....
(19).....	.....	.....
(20).....	.....	.....
(21).....	.....	.....
(22).....	.....	.....
(23).....	.....	.....
(24).....	.....	.....
(25).....	.....	.....

9.3.3 FUNCTIONAL PROFILE

-----

9.3.3.1 User Identification & Accountability

- 9.3.3.1.a ...Yes ...No Can each user be identified by a unique User-Id and password?  
If Yes, describe the attributes of the User-Id and Passwords; what is the maximum number of User-Ids simultaneously supported.
- 9.3.3.1.b ...Yes ...No Can a user have its own set of access rules (defines what data and resources the user has access rights to)?
- 9.3.3.1.c ...Yes ...No Are user groups supported i.e. a user group has access rules associated to it and a unique user who is a member of the user group by default also the access rules of the group?  
If yes, describe the implementation of user groups and any limitations imposed on unique users who are members of the user group.
- 9.3.3.1.d ...Yes ...No Can a user be a member of more than one user group?  
If yes, describe what happens when a user is a member of two user groups with contradictory access rules.
- 9.3.3.1.e ...Yes ...No Are user passwords always kept and stored in encrypted form (on disk, in CPU's memory, security log)?  
Describe encryption mechanism and whether organisation can replace supplied algorithm with their own algorithm.
- 9.3.3.1.f ...Yes ...No Can the system be set up so the user are responsible for their own password administration?  
Please describe.
- 9.3.3.1.g ...Yes ...No Can the user be forced to changed their password within a specific duration of time?  
Please describe.
- 9.3.3.1.h ...Yes ...No Can the syntax (minimum number of characters, password character patterns, different from previous password, etc) of an acceptable password be specified and enforced by the system?  
Please describe.

- 9.3.3.1.i ...Yes ...No Are there utilities for administering User-Ids and passwords?  
If yes, please describe.

9.3.3.2 Access Rule & Access Rule Administration

- 9.3.3.2.a ...Yes ...No Can access rules be defined for DASD datasets?  
If yes, please describe the definition procedure.
- 9.3.3.2.b ...Yes ...No Can access rules be defined for magnetic tape datasets?  
If yes, please describe the definition procedure.
- 9.3.3.2.c ...Yes ...No Can access rules be defined for DASD volumes?  
If yes, please describe the definition procedure.
- 9.3.3.2.d ...Yes ...No Can access rules be defined for magnetic tape volumes?  
If yes, please describe the definition procedure.
- 9.3.3.2.e ...Yes ...No Can access rules be defined for TSO commands?  
If yes, please describe the definition procedure.
- 9.3.3.2.f ...Yes ...No Can access rules be defined for programs and utilities?  
If yes, please describe the definition procedure.
- 9.3.3.2.g ...Yes ...No Can access rules be defined for network terminals?  
If yes, please describe the definition procedure.
- 9.3.3.2.h ...Yes ...No Can access rules be defined for online transactions?  
If yes, please describe the definition procedure.
- 9.3.3.2.i ...Yes ...No Can access rules be defined for VTOCs?  
If yes, please describe the definition procedure.
- 9.3.3.2.j ...Yes ...No Can access rules be defined for catalogs (VSAM, etc)?  
If yes, please describe the definition procedure.
- 9.3.3.2.k ...Yes ...No Can access rules be specified to deny a user access to specific resource?  
If yes, please describe.

- 9.3.3.2.l ..Yes ..No Can default access rules be specified to protect generic classes of data and resources? IF yes, please describe.
- 9.3.3.2.m ..Yes ..No Can default access rules be overridden for particular users without removing the general application of the default access rules?
- 9.3.3.2.n ..Yes ..No Can new data files and resources be protected by default i.e. access is restricted to creator, etc until access rules are defined? IF yes, please describe.
- 9.3.3.2.o ..Yes ..No Can access rules be specified for users, user groups, programs and jobs? IF no for any user classification, please describe.
- 9.3.3.2.p ..Yes ..No Can access rules be specified for different levels of access i.e. read, add, delete, update, combinations, etc? Please describe access levels and combinations for different types of resources.

9.3.3.3 Software Interfaces

9.3.3.3.a What interfaces are available for Data & Resource Monitoring Systems? Describe what the interface does, who supplies and supports the interface, and how it is implemented.

- ..Yes ..No CA-JARS (Computer Associates P/L)
- ..Yes ..No CONTROL/SHF (Boole & Babbage Inc)
- ..Yes ..No Others.....

9.3.3.3.b What interfaces are available for Disk Management Systems? Describe what the interface does, who supplies and supports the interface, and how it is implemented.

- ..Yes ..No DMS/OS (Sterling Software)
- ..Yes ..No HSM (IBM)
- ..Yes ..No UCC-THREE (UCCEL)
- ..Yes ..No Others.....

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9.3.3.3.c What interfaces are available for Tape Management Systems? Describe what the interface does, who supplies and supports the interface, and how it is implemented.

- ..Yes ..No UCC-ONE (UCCEL Corp)
- ..Yes ..No VALU-LIB II (Value Software)
- ..Yes ..No Others.....

9.3.3.3.d What interfaces are available for Library (Source, Object, Executable Code) Management Systems? Describe what the interface does, who supplies and supports the interface, and how it is implemented.

- ..Yes ..No PANVALET/PANEXEC (Pansophic)
- ..Yes ..No LIBRARIAN
- ..Yes ..No Others.....

9.3.3.3.e What interfaces are available for Data Directory/Data Base Management/4th Generation Development Tool Systems? Describe what the interface does, who supplies and supports the interface, and how it is implemented.

- ..Yes ..No PREDICT/ADARAS/NATURAL... (AG Software)
- ..Yes ..No IDD/IDMS-R/ADS... (Cullinet)
- ..Yes ..No TIS/SUPRA/MANTIS... (Cincom Systems)
- ..Yes ..No DB2/QMF... (IBM)
- ..Yes ..No DATACOM-DB/IDEAL... (Applied Data Research)
- ..Yes ..No SIR-DEMS/SIR-SQL... (SIR)
- ..Yes ..No MODEL 204... (Computer Corp)
- ..Yes ..No Others.....

9.3.3.3.f What interfaces are available for CAAT's (Computer Assisted Audit Techniques) Development Tools? Describe what the interface does, who supplies and supports the interface, and how it is implemented.

- ..Yes ..No SAS (SAS)
- ..Yes ..No PANAUDIT (Pansophic)
- ..Yes ..No EDP Auditor (Cullinet)
- ..Yes ..No CARS (Sage)
- ..Yes ..No Others.....

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9.3.3.3.g What interfaces are available for Text Storage, Maintenance and Retrieval Management Systems? Describe what the interface does, who supplies and supports the interface, and how it is implemented.

- ...Yes ...No STAIRS (IBM)
- ...Yes ...No STATUS (United Kingdom Atomic Energy Authority)
- ...Yes ...No Others.....

9.3.3.3.h What interfaces are available for Data Communications Systems? Describe what the interface does, who supplies and supports the interface, and how it is implemented.

- ...Yes ...No CICS (IBM)
- ...Yes ...No COMPLETE (AG Software)
- ...Yes ...No ENVIRON/1 (Cincom Systems)
- ...Yes ...No Other.....

#### 9.3.3.4 Security Operations

9.3.3.4.a Please describe the access control philosophy and mechanism that is the basis for the Data & Resource Access Control System.

9.3.3.4.b ...Yes ...No Are there any differences in the level and/or type of access control provided for data and resources when operating in batch, online, or TSO modes of operation.

9.3.3.4.c When are users identified to the D&RAC system? Please describe the procedure for all circumstances.,

- ...Yes ...No At Log-On Time?
- ...Yes ...No At Job Execution Time?
- ...Yes ...No At Program Execution Time?
- ...Yes ...No Other.....

9.3.3.4.d ...Yes ...No Can the number of unsuccessful identification (User-Id) and authorisation (Password) attempts be controlled by the Security Officer? Please describe what action is taken when the number of failed attempts is exceeded.

9.3.3.4.e ...Yes ...No Can the number of unsuccessful identification and authorisation sessions be controlled by the Security Officer? Please describe what action is taken when the number of failed sessions is exceeded.

9.3.3.4.f Please describe what facilities are provided for changing passwords, access rules and other security parameters?

9.3.3.4.g ...Yes ...No Can certain security administration functions be decentralised and/or delegated? Please describe.

- ...Yes ...No Changing Of Passwords?
- ...Yes ...No Setting Up Of User and/or User Groups?
- ...Yes ...No Establishing Access Rules?
- ...Yes ...No Production of Security Reports?
- ...Yes ...No Others.....

9.3.3.4.h ...Yes ...No Are enquiry facilities provided as part of the system? Please describe.

- ...Yes ...No Standard Enquiries?
- ...Yes ...No Ad Hoc Enquiry Facility?

9.3.3.4.i ...Yes ...No Are report facilities provided as part of the system? Please describe.

- ...Yes ...No Standard reports?
- ...Yes ...No Ad Hoc Reporting Facility?

9.3.3.4.j Where is all access control activities recorded? Please describe.

- ...Yes ...No SMF File?
- ...Yes ...No D&RAC Constructed File(s)?

9.3.3.4.k ...Yes ...No Are immediate notification facilities provided for security violations? Please describe.

...Yes ...No Security Console?

...Yes ...No Operator Console?

...Yes ...No Other.....

9.4 EVALUATION CRITERIA

9.4.1 EVALUATION MODEL'S PARAMETERS

9.4.1.1 Evaluation Point Distribution

60 :Technical Compliance  
 20 :Non-Technical Compliance  
 20 :Cost Model Comparison

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100 Total Base Evaluation Points

NOTE: Cost Model Comparison will include cost of software purchase or licence, software maintenance charges, implementation costs, training costs, documentation costs, support staff costs and exceptional hardware resource costs.

9.4.1.2 Risk Assessment Evaluation Point Distribution

<u>Evaluation Points</u>	<u>Risk/Exposure Scenario</u>
-5-Risk (1)	That all tendered facilities are not part of the product's international product development strategy, but some tendered facilities are local (Australian) enhancements.  Exposure: The exposure is the result of local developments not being recognised by the primary D&RAC system development area who may enhance the product to eliminate or cause faults in the local enhancements. The AAO could spend considerable time and effort implementing a data security strategy that may need costly changes to implement new releases of the D&RAC system.  Assessment: Level of risk will be based on past (5 years) occurrences of these enhancements being made obsolete and causing disruptions to user sites.
-5 Risk (2)	That the D&RAC software is not kept up-to-date with the latest releases of the operating system and other commonly available system software facilities.  Exposure: The AAO is forced to not implement new releases of the operating system or system software because the D&RAC system does not yet support them.  Assessment: Level of risk will be based on the software vendor's past (5 years) record of releasing new versions of the D&RAC system to operate with and take advantage of new releases of the operating system and/or other commonly used system software.



9.4.2 EVALUATION DETAIL CHECKING  
 =====

9.4.2.1 Benchmarks

It is the considered opinion of the Evaluation Team that benchmarks would be difficult to define and monitor. Therefore no benchmarks will be required.

9.4.2.2 Demonstrations

A demonstration of the administration activities will be required. This will include defining users, establishing and changing passwords, setting up access rules, performing enquiries, producing reports and other data security administration activities.

9.4.2.3 Reference Site Checking

The main evaluation checking will be through reference site checking and site visits. The reference sites will be similar to the site the Australian Audit Office will be establishing and will use similar software to the system software selected by Evaluation Team.

The tenderer must provide details of three reference sites that have used the tender software product for at least twelve months. Once the software strategy for the AAO's host computer environment has been more closely determined, the tenderer may be required to specify additional reference sites.

9.5 SUPPLY, INSTALLATION AND ACCEPTANCE  
 =====

9.5.1 SUPPLY  
 =====

The tenderer will supply the software product on a medium suitable for installation on the AAO host computer. Magnetic tape will be a suitable media for delivery.

9.5.2 INSTALLATION  
 =====

The tenderer will be required to supply sufficient installation support to install the software on AAO host computer site in Canberra. AAO will provide support staff to assist the tenderer with the installation.

9.5.3 ACCEPTANCE  
 =====

(refer to proforma acceptance procedure as specified in appendix D of the tender).

1. INTRODUCTION  
 =====

An evaluation methodology is a documented set of procedures for determining the (whole or part of a) tendered solution that most effectively meets (all or part of) the requirements specified within a Request For Tender (RFT). It establishes the criteria by which (all or part) tenders are assessed and selected for acceptance.

The tenderer's and the public's confidence can best be guaranteed by ensuring that the selection process is based on a evaluation methodology and criteria that has been established and documented in advance of the receipt of tenders. Adherence to the methodology and criteria must be maintained throughout the evaluation process.

1.1 OBJECTIVES OF EVALUATION METHODOLOGY  
 =====

1.1.1 Differentiate Between Tendered Solutions

To establish a logical and defensible means for differentiating between tendered proposals.

1.1.2 Select Most Effective (All or Part) Tendered Offers For Acceptance

Enable the tendered solution or combination of part tendered solutions that most effectively meet the requirements of the organisation to be selected on the basis of a criteria considered to be fair and representative of the government's procurement policies (satisfies appropriate requirements, is cost-effective, provides offsets and/or Australian content, etc).

1.1.3 Reduce Unnecessary Effort By Limiting Scope Of Detailed Evaluation

Facilitate the determination of a shortlist of tenderers through the consideration of mandatory requirements (as specified in the RFT) and cost-effectiveness. Tendered solutions can be eliminated from further evaluation (all or part) if they can not meet (all or part) of the specified mandatory requirements or the tendered cost is considerably more than other appropriate tendered solutions (this consideration would only apply when a representative selection of tendered solutions do meet the documented mandatory requirements).

1.1.4 Provide Ranking Of Shortlisted Tenderers

Facilitate the ranking of shortlisted tenderers (for all or part of the requirement) through the consideration and assessment of mandatory, highly desirable, desirable and optional requirements (as specified in the RFT).

1.1.5 Provide Demonstratable Selection Method

Provide a demonstrable method for determining the ranking of shortlisted tenderers (for all or part of the requirement) by assessing appropriateness of tendered solutions, whole-of-life costs comparisons and risk assessments.

Evaluation Methodology By David Angeloro (Draft 17th March, 1986)

## 1.2 ASSESSING APPROPRIATENESS

The assessment of appropriateness of tendered solutions requires subjective judgements by the Evaluation Team. It is necessary for the criteria of these judgements to be determined and documented before receipt of tenders to avoid the likelihood of their being influenced by the contents of the tenders.

Appropriateness can be assessed using various criteria, including compliance with (technical and non-technical) requirements, overall cost, cost-effectiveness and risk assessment.

### 1.2.1 Compliance With Requirements

The RFT documents the mandatory, highly desirable, desirable and optional requirements. Each requirement can be given a weighting indicating its perceived importance to the overall solution. During the evaluation, the Evaluation Team may assign all or part of the weighting based on their assessment of the tendered solution's appropriateness to satisfy the requirement (100% would be total compliance or appropriateness in satisfying the requirement).

Care should be taken to ensure the most important requirements receive proportionally the greatest weighting, otherwise a poor solution with many optional features may score a higher total weighting than a more basic but more appropriate solution.

### 1.2.2 Overall Cost and Cost-Effectiveness

The cost of the solution in the first year and its total real cost over a whole-of-life model (five to ten years) should be considered. The lowest cost (total first year and/or whole-of-life cost) offering may not (and often does not) provide the most cost-effective solution when hidden costs and unattainable benefits (savings) are considered.

The tendered price should not be the only basis for calculating cost. The cost of support for training, installation, fault analysis & correction, consultancy, etc need to be included in any cost analysis. In addition, operating costs including usage of consumables, power operating of air conditioning, etc need to be calculated for the whole-of-life to obtain an accurate and fair cost comparisons.

The additional cost components may be tendered items priced within the tender or it may be necessary to estimate the cost for their provision from external sources. The total calculated costs for the first year and whole-of-life are required to obtain fair and defensible cost comparison.

A cost model of all relevant cost components should be established in the RFT and should include not only hardware & software costs, but also training, installation support, maintenance, required consultancy services, consumables, etc for the whole-of-life of the solution. Only items perceived as being required and of significant variance between tendered solutions should be utilised.

### 1.2.3 Risk Assessments

Some tendered solutions may present certain risks or exposures (promised technology not yet proven, start up company that may not survive, difficulty in obtaining trained specialist staff, etc). These risks can be significant in relation to selecting the most appropriate tendered solution.

A significant risk factor may be the risk associated with mixing and integrating hardware from different vendors. Equipment interfacing is quite complex and any problems may result in costly implementation delays and interruptions to project schedules. In addition, equipment maintenance (fault analysis and correction) is usually fragmented between the various vendors and detailed identification of faults often becomes the responsibility of the Department when two vendors each claim the fault originates in the others equipment. The merits of minimising risk while maintaining cost-effectiveness must form an significant evaluation criteria.

Risk assessment will be primarily a subjective judgement made by the Evaluation Team. Assessing risks/exposures for all requirements would be difficult and in some cases it would be irrelevant. It will apply only to areas where perceived risks are considered to be of importance to the evaluation process. Selective use of risk assessments should be applied to achieve the best results.

Documented evidence of actual situations are needed to support risk assessments.

## 2. WEIGHTED COMPLIANCE/COST/RISK EVALUATION MODEL

A system of evaluation points and weightings can be used for assessing the appropriateness and cost-effectiveness. Each acceptable part tender of hardware, software and service will be assigned a maximum of 100 evaluation points. The 100 evaluation points will be divided into Technical Compliance, Non-Technical Compliance and Cost Comparison. The actual distribution of the 100 evaluation points is subjectively determined by the Evaluation Team based on the importance of each assessment category for the tendered item.

Weightings are assigned to each individual requirement. The magnitude of the weighting will depend on the Evaluation Team's perceived importance of the requirement. The Evaluation Team will assess each of the tendered solutions and they will assign 0 to 100% of maximum weightings. The total assessed weightings for each evaluation category will be normalised to obtain the corresponding evaluation points.

Risk assessments are selectively applied as minus evaluation points. Risk evaluation points should be no more than 20 evaluation points. Many part tendered solutions will have a very low potential for risk and therefore will have a maximum number of risk evaluation points of five or less.

### 2.1 COMPLIANCE WEIGHTINGS

Each technical and non-technical requirement will be assigned a maximum weighting indicating its perceived importance to the overall solution. It is not necessary to restrict the total number of assigned weightings, since each evaluation category will be normalised to calculate the corresponding evaluation points.

Each tendered solution is assessed for each requirement and given all or part of the weighting assigned for the requirement. The assigned weighting indicates its relative appropriateness in complying to the requirement.

The weightings will be subjectively determined by the Evaluation Team using the following guidelines:

- (a) The size of a weighting should be ranked in accordance with its specification (within the RFT) as being mandatory, highly desirable, desirable or optional. Mandatory requirements should have higher rankings than highly desirable; highly desirable requirements should have higher ranking than desirable; etc.
- (b) The total weighting of mandatory requirements should be greater than the summation of all the highly desirable, desirable and optional weightings. The total weighting of the highly desirable requirements should be greater than the summation of all desirable and optional weightings. The total weighting of the desirable requirements should be greater than the summation of all the optional weightings.

During the evaluation process, the evaluation team will assign a part weighting (0 - 100% of each weighting) for a tendered solution. The part weighting will be subjectively assigned based on the Evaluation Team's assessment of the tendered solution's fulfillment of the requirement.

To assist in the assessment processes standard concerns for each requirement will be documented and applied to each tendered solution. Each concern will have a weighting assigned to it and this will be subtracted from the requirement's total weighting if the Evaluation Team believes the concern applies to the tendered solution.

#### 2.1.1 Technical Compliance

Technical compliance can be assessed by determining whether the tendered solution satisfies specific technical requirements that have been specified in the RFT as mandatory, highly desirable, desirable and optional. Each requirement can be given a weighting that ranks its importance to fulfill a major technical requirement.

##### EXAMPLE: DP/WP/PC PRINTER

Weighting	Technical Requirements
25	It is mandatory that the printer is capable of printing an A4 page of text in less than 30 seconds.
25	It is mandatory that the printer handle A4 paper as individual sheets that are automatically loaded without operator intervention.
25	It is mandatory that the quality of printed output is correspondence quality (solid letter formation with no discernable dots) and it photocopies with minimal deterioration of letter formation.
25	It is mandatory that the printer operates in normal office conditions (15 - 30 degrees celsius, 10 - 80% humidity, 240 volts/50 Hz/single-phase power).
25	It is mandatory that the printer operates with main CPU and software being tendered.
25	It is mandatory that the printer supports text and graphic output as one device (otherwise two printers must be offered).
20	It is highly desirable that the printer supports MS-DOS software and it has appropriate drivers (IBM, EPSON, etc) to interface to most personal computer applications.
20	It is highly desirable that the printer operates at less than 50 decibels of noise.
20	It is highly desirable that a variety of typefonts is available and easily interchangeable.

- 15 It is desirable that the printer handles quarto and foolscap paper sizes that are automatically loaded without operator intervention.
- 15 It is desirable that the printer's paper sheet feed mechanism can handle two or more paper bins that can be programmatically selected for operation. (one for letterhead, one for blank paper, etc.)
- 5 It is optional for the printer to have different coloured impression agents (ink, ribbons, toner, etc) available.

2.1.2 Non-Technical Compliance

Non-technical compliance includes areas such as easy of use, ease of training staff, productivity, ease in hiring trained staff, ability of vendor to provide training and specific types of support, etc. Each non-technical requirement will again be classified as mandatory, highly desirable, desirable or optional with a weighting that ranks its importance to fulfill a major non-technical requirement.

EXAMPLE: DP/WP/PC PRINTER

Weighting Non-Technical Requirements

- 25 It is mandatory that the printer has an operator's manual written in english that is easy to follow for all the features of the printer.
- 25 It is mandatory that loading of paper be simple enough for office staff to perform from instructions attached to the device.
- 25 It is mandatory for the printer to be reliable at loadings of 10,000 pages per month.
- 20 It is highly desirable for the replacement of the impression agent (ink ribbon, inkjet cartridge, toner cartridge, etc) to be performed without any possibility of the operator being dirtied in anyway.
- 15 It is desirable for the printer to require only fault correction maintenance and not require regular cleaning and preventative maintenance.

2.2 COST COMPARISON WEIGHTINGS

Cost appropriateness assesses the tendered solutions cost-benefits in relation to predetermined cost model values over the whole-of-life cost. Individual weightings can be assigned to each of the five to ten year cost components, however the total year one cost and the total ten year cost are the most significant.

Unlike the technical and non-technical weighting assessments which are always positive, cost comparison weighting assessments can be positive or negative. The cost comparison weighting assessment is calculated not subjective.

Cost Comparison Weighting =

$$\left( 1 + \frac{(\text{Modeled Cost} - \text{Tendered Cost})}{\text{Modeled Cost}} \right) * \text{Weighting}$$

In this way expensive solutions are proportionally penalised while more cost-effective solutions are benefited.

2.2.1 WHOLE-OF-LIFE COST MODEL

The whole-of-life cost model represents the total cost for a five to ten year period using discounted cash flows. It will contain all cost components associated with a major requirement. There will be a whole-of-life cost model for each allowable part tender.

EXAMPLE: DP/WP/PC PRINTER

Description	01	02	03	04	05	06	07	08	09	10
Printer (Purchase)	5500									
Parallel Interface	140									
Install/Train (1day)	250									
Typefonts (5)	300									
Yearly Maintenance	600	660	726	798	878	966	1062	1169	1286	1415
Cartridge (100each)	1000	1100	1210	1331	1464	1610	1771	1948	2142	2357
Yearly Total	7790	1760	1936	2129	2342	2576	2833	3117	3428	3772
10 Year Total	27,683									

GENERAL ASSUMPTIONS:

- (1) On-going cost will increase at a rate of 10% per year compounded.
- (2) 100,000 pages per year will be printed.

PRODUCT SPECIFIC ASSUMPTIONS:

- (1) Cartridge will print approximately 10,000 pages.

NOTE: above example is not a discounted cashflow.

2.2.2 Cost Comparison Weighting

Prior to the receipt of the tenders, the Evaluation Team will establish the cost comparison weightings and whole-of-life cost model. During the evaluation process, the Evaluation Team will calculate the actual whole-of-life cost model for each of the tendered solutions.

**EXAMPLE: DP/WF/PC Printer**

Cost Weightings: 25 - Year 1 Total Cost  
25 - 10 Year Total Cost

Whole-Of-Life Cost: 7,790.00 - Year 1 Total  
27,683.00 - 10 Year Total

Printer A Whole-of-Life Cost: 6,500.00 - Year 1 Total  
31,000.00 - 10 Year Total

Year 1 Cost Weighting =  $(1 - (6,500 - 7790)/7790) * 25 = 29.14$

10 Year Cost Weighting =  $(1 - (31,000 - 27,683)/27683) * 25 = 22.00$

Cost Comparison Weighting = 51.14

**2.3 RISK ASSESSMENT**

In addition to the technical compliance, non-technical compliance and cost comparison considerations, risk of individual tendered solution must be considered. Risk/exposures can be determined by the Evaluation Team and negative evaluation points applied. During evaluation process 0 to 100% of the risk evaluation points can be assigned.

**EXAMPLE: DP/WF/PC Printer**

Points	Risk/Exposure
2	Printer uses non-standard ribbon or cartridge only obtainable from printer's manufacturer.
2	Printer is manufactured by new start-up company.
4	Printer uses new, unproven printer technology.
10	Some of the features tendered are 'futures' which may be delayed or never delivered; full acceptance testing can not be performed during evaluation period.

**3. NORMALISING COMPLIANCE/COST WEIGHTINGS**

The total weighting for technical compliance, non-technical compliance and cost comparisons are only meaningful within their own evaluation category. Each weighting total must be normalised to equate with its corresponding maximum evaluation points.

**3.1 ESTABLISHING EVALUATION POINTS**

Prior to the receipt of tenders, the Evaluation Team will proportionally allocate the evaluation points to each of the evaluation categories i.e. technical compliance, non-technical compliance, cost comparisons and risks.

The following guidelines should be followed:

- (a) The total of the technical compliance, non-technical compliance and cost comparison evaluation points should equal 100 evaluation points.
- (b) Risk evaluation points should equal no more than -20; it may equal less and even be zero.
- (c) The proportion between technical compliance, non-technical compliance and cost comparison evaluation points should be established based on the Evaluation Team's considered opinion with no one category making up more than 60 points.

**3.2 NORMALISING WEIGHTINGS TO OBTAIN EVALUATION POINTS**

Each part tender will have its technical and non-technical requirements established and weightings assigned, a whole-of-life cost model will be developed and risk/exposure model produced. Each shortlisted part tender will be assessed and its total weighting for each evaluation category calculated.

The following formula will be used to normalise the weightings to obtain evaluation points within each category.

ASSESSED EVALUATION POINTS =

$$\frac{\text{TOTAL ASSESSED WEIGHTINGS}}{\text{TOTAL POSSIBLE WEIGHTINGS}} * \text{TOTAL EVALUATION POINTS}$$

NOTE: the total number of evaluation points for cost comparison can be greater than its assigned number of evaluation points.

### 3.3 TOTAL ASSESSED EVALUATION POINTS

At the end of the evaluation, the Evaluation Team will add the technical compliance evaluation points, non-technical evaluation points, cost comparison evaluation points and risk evaluation points (which are negative) to obtain the evaluation total.

The highest evaluation total will receive the recommendation.

### 4. EVALUATION PROCEDURE

The following procedure will be used to prepare, document and use the Evaluation Methodology and Model.

#### 4.1 PREPARATION OF REQUEST FOR TENDER

The Evaluation Team will prepare and document the Request For Tender (RFT) using format agreed to by DOLGAS. The following items (not exclusive) will be prepared for each part tender:

- (1) The Evaluation Methodology will be reviewed and approved by the Audit Office Management and DOLGAS; it will be documented and included in the RFT.
- (2) All technical and non-technical requirements will be determined and documented; no compliance weightings will be included in the RFT.
- (3) Whole-Of-Life cost model pro forma will be developed and documented within the RFT; no dollar costs or cost comparison weightings will be included in the RFT.
- (4) Risk/exposure scenarios will be determined and documented within the RFT; the risk evaluation points will be documented within the RFT.
- (5) Evaluation points for technical compliance, non-technical compliance, cost comparison and risk assessment will be assigned and documented within the RFT.

#### 4.2 DURING PREPARATION OF RFT AND BEFORE OF TENDER CLOSING DATE

The Evaluation Team will prepare and document an Evaluation Model in accordance with the following procedures:

- (1) Compliance weighting will be assigned and documented for each technical and non-technical requirement as per the guidelines documented within the Evaluation Methodology.
- (2) The whole-of-life cost model will be developed using typical costs obtained from a variety of industry sources; cost comparison weights will be assigned and documented for the cost comparisons.
- (3) Risk evaluation points for the risk/exposure scenarios will be assigned and documented.
- (4) Evaluation model will be reviewed and approved by the Audit Office Management; if necessary modifications will be made.
- (5) Evaluation model will be lodged with DOLGAS prior to the tender's closing date.

#### 4.3 DURING EVALUATION PROCEDURE

=====

The Evaluation Team will use the following procedure for assessing each part tender.

- (1) Part tenders that do not satisfy a mandatory requirement will be rejected from further evaluation; if the Evaluation Team considers it unreasonable (through discussions with tenders and management), the mandatory requirement will be reclassified as highly desirable.
- (2) The whole-of-life cost models will be developed for each part tendered solution; the cost comparison weightings and evaluation points will be calculated. Each shortlisted tender will be ranked by cost comparison evaluation points; lowest real cost tender will be ranked at top.
- (3) Board evaluation of the part tender's compliance will be performed through reference checks and tender's discussions; this will involve assigning 100% to each technical and non-technical requirement for which the tender complies; the 'first pass' technical and non-technical compliance weightings will be assigned.
- (4) A shortlist of tenders for the part tender will be selected using assessments from steps (1), (2) and (3) above.

Step (1) will eliminate tenders that can not fully satisfy the documented mandatory requirements.

The compliance weightings will be totalled for the highly desirable, desirable and optional requirements (NOTE: the mandatory weightings are excluded, since at this stage they will be equal for all remaining tenders) will be added and normalised to obtain 'first pass' evaluation points; the calculated compliance and cost comparison evaluation points will be added for each part tender and the part tenders will be ranked.

The risk/exposure scenarios will be assessed and risk evaluation points assigned for each part tender; each risk evaluation points will be documented with the reason for assessing the level of risk.

The shortlist will be made up of tenders within 25% of top rank 'first pass tender'.

- (5) Detailed evaluation will then commence and it will involve verification of the level of compliance achieved for each mandatory, highly desirable, desirable and optional requirement. This will be performed through demonstration, detailed reference checking, benchmarking, technical discussions with tenderers and acceptance testing. Each tender will have their detailed compliance weightings determined and the reasons for assigning part values will be documented.

(7) After detailed evaluation, the evaluation points for technical and non-technical compliance will be calculated and added to the cost comparison evaluation points. Risk evaluation will be subtracted from the total; the part tenders will be ranked by total number of evaluation points assessed.

(8) The Evaluation Report will be prepared and recommendation to proceed with negotiations with top ranked tenderer will be formally presented by the Evaluation Team.

P86/37

The Secretary  
Department of Local Government and  
Administrative Services  
GEO Box 1920  
CANBERRA A.C.T. 2601

Attention : Mr. R. Rubie

CERTIFICATE OF EXEMPTION

1. The Australian Audit Office (AAO) has Government endorsement, subject to review by the Joint Parliamentary Committee of Public Accounts (JCPA), of a proposal to acquire and implement a central computing facility together with a series of local network facilities in Central and Regional Offices. These facilities will be used to develop and implement a range of Information Management Systems and Audit Support Facilities over the next 3 - 4 years.

2. It is a decision of this Office that the element of the overall RFT relating to the central computing facilities should be restricted to IBM Compatible equipment. The network, including the Central Office node, and associated peripherals and software will be open to public tender. I am therefore seeking your agreement to a Certificate of Exemption for that purpose.

3. This issue was discussed with officers of your department on March 20 1986. Following that discussion, in a letter dated 3 April 1986 Mr Rubie of the Major Purchasing Branch of your department requested further information on the reason for the proposed restriction. This is provided as Attachment A.

4. In his letter Mr Rubie raised a number of concerns about the AAO's proposal to restrict its tender. I believe these are adequately covered in the attachment but will comment separately on the issues raised to ensure that there is no misunderstanding about these particular points.

5. The points made are as follows:

- a) "Your officers would also need to familiarise themselves with other non-IBM software which is owned by the Commonwealth."

It is agreed that the selection of a IBM compatible equipment will not provide AAO staff with experience with products used by auditees with non-IBM equipment. However, following the experience in overseas audit institutions, the AAO has already commenced to develop a standard interface for the majority of Computer Assisted Audit Techniques (CAATs) that are used in the audit of financial statements. This initiative is intended to provide a standard interface, familiar to all audit staff, thus minimising the necessity for audit staff to be familiar with the large number of different DP environments encountered at auditees. The data will either be transferred from the auditee site to the AAO site, generally by magnetic tape, or the standard CAATs interface will be temporarily loaded onto the auditee site, assuming that the auditee has a compatible environment. This approach has been trialled and gained the general acceptance of audit staff.

However, the CAATs used in the audit of financial statements represents only part of the general use of CAATs. Specialised CAATs are required to support project audits and these CAATs vary with each audit. Therefore, DP audit staff will have to be able to quickly develop some form of system to support the audit. Once again, this may have to be done at the auditee site.

Therefore, whilst the DP audit staff will have to potentially use a wide range of different equipment the IBM compatible environment will still be the most common environment they are likely to encounter. Familiarity with the IBM compatible environment will obviously improve productivity more than familiarity with any other environment.

- b) "System familiarisation in the IBM environment could be achieved in the same way in which you plan to deal with the present non-IBM environment."

The task of ensuring audit staff, both DP and field, have sufficient knowledge of particular environments is a major problem for the AAO. DP audit staff generally encounter several different DP environments as they progress from one audit to the next. Due to the high staff turnover and the competing demands for DP specialists, it is rarely possible for one DP auditor to specialise in one particular environment and be available for related audits. In reality, whoever is available will be allocated to the next audit.



As the IBM compatible environment is predominant the major training requirement is in respect to this environment. Therefore, if our DP audit staff were familiar with an IBM compatible environment through the use of the standard AAO facilities, the overall training requirement will be minimised. Training in other environments will remain a problem for which there is no straightforward solution.

- c) "Irrespective of the hardware you acquire your officers will need to undergo extensive training in the software to be utilised throughout client departments."

As already outlined, the AAO's strategy is to set up an environment that in the first instance will be used at the AAO site on files extracted from the auditees. While the AAO will continue to develop some CAATS at auditees sites, the requirement for training is minimised if the audit staff are familiar with an IBM compatible environment.

- d) "If familiarity with software running on IBM systems is crucial for audit purposes then this can be achieved by either taking advantage of suitable training courses and/or by using client/bureau computer resources through networking."

This approach has already been tried and has not succeeded. In the past the AAO has used training courses to upgrade its DP specialist's knowledge of a particular category of equipment and has found that even with DP specialists, training courses do not provide the level of expertise generally required for the audit of complex DP systems. In practice, the DP specialist has to draw on his overall DP experience and relate this as best they can to the particular environment. This problem is exacerbated by the fact that at present the DP specialist receives very little "hands on" practical experience as part of the general audit role. Therefore, his overall DP experience becomes "out of date" compared with the constant change in the technologies used by auditees.

The use of client/bureau facilities has also been tried and has not succeeded. In the past the AAO has used the facilities of the Department of Health, the Department of the Special Minister of State and currently uses CSIRONET. In all cases these external bureau services have not been able to provide the level of service required, mainly due to the priority of their own resource requirements.

The above comments reflect one of the main reasons the AAO is seeking the acquisition of its own facilities. Given that the use of the AAO facilities as part of the general audit task will increase the level of DP awareness of all staff, especially DP specialists, then the maximum benefit from this investment will be achieved if the AAO has an IBM compatible environment.

- e) "You may acquire smaller systems from different vendors capable of running typical software which is being used in different departments of the Commonwealth."

This approach is considered impractical. It would require a significant continuing investment in resources to set up and maintain the many different environments and the benefits of such an approach are unclear.

6. The basis behind the AAO's quoted figure of 60% of auditees with an IBM compatible equipment is outlined in the attachment. We have investigated this further and from this we have found that 46% of all auditees operate in the IBM compatible environment. More importantly, 71% of the large and medium sized auditees operate in the IBM compatible environment. The AAO is aware that its information base is not complete and would be interested in knowing any information DOLGAS maintains about departments' computing facilities.

7. The apparent discrepancy between your experience and our assessment could be explained by the fact that the AAO audits a large number of government entities that do not purchase computer equipment through your department. The point to be recognized is that it would not matter if the IBM compatible market share was even as low as 30%. IBM compatible equipment is the single category of computing equipment that is used by the maximum number of auditees and the selection of that category of equipment will enable the AAO to better position itself to effectively audit in the increasingly computerised environment in the future.

8. The AAO recognizes that the selection of an IBM compatible environment will not solve all of its problems. It will, however, maximize the benefits to be gained from the significant investment in information technology and provide a strategic environment for the future.

M.J. Shanahan  
Assistant Auditor-General  
DP Branch

9 April 1986



COMMONWEALTH OF AUSTRALIA  
AUSTRALIAN AUDIT OFFICE

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Please quote M86/100

Secretary  
Joint Parliamentary Committee of Public Accounts  
Parliament House  
CANBERRA. A.C.T.

COMPUTER ACQUISITION PROPOSAL BY THE AAO

1. The attached information is provided in response to the formal requests for written responses made at the public hearing on 17 April 1986 as clarified between Ms Cronin of the Secretariat and Mr Rossell of the AAO.
2. Mr Angeloro has indicated that in response to the Committee's request to him personally, he will make a separate, private submission on his perception of the adequacy of the existing DOLGAS guidelines.
3. For the AAO's part, we are currently modifying the papers prepared by Mr Angeloro on the RFT Strategy and the Evaluation Methodology for formal presentation to DOLGAS. A meeting with DOLGAS has been arranged for Thursday, 1 May 1986. The Committee will be kept informed on the progress of our discussions with DOLGAS.
4. For further information please contact Mr Max Shanahan, Assistant Auditor-General DP Branch, on 484810 or Mr Bruce Rossell, Director Computer Services, on 484805.

*B. T. Kimball*

B. T. Kimball  
Acting First Assistant Auditor-General  
Corporate Management Division  
24 April 1986

APPENDIX 7

Australian Audit Office Letter of  
24 April 1986

1. QUANTIFICATION OF BENEFITS

- 1.1. The AAO included in the DP Strategic Plan Section 9 a statement addressing cost/benefit considerations. The statement, based on the FSB Guidelines on preparing DP Strategic Plans, outlined the non-tangible and tangible benefits associated with the project. The difficulty that faced the AAO when preparing the statement was that benefits were extremely difficult to quantify. It was recognized that the benefits would not be realised in monetary terms by staff savings or staff redeployment.
- 1.2. The underlying pressure for the AAO to seek the proposed investment in Information Technology arose from the fact that auditees were increasing their investment in that area. It was considered that, for the AAO to be able to be effective in the future, it needed to make a similar investment so that the experience gained from the use of technology to support its own activities would give the AAO the skills and experience to audit other organisations use of technology.
- 1.3. As input to the development of the DP Strategic Plan, the AAO undertook a major review of information system and audit support needs which would increase the overall effectiveness of the AAO in its audit activities. The benefits of the proposal were seen to be the following:

Improved target selection. This would be as result of better information base on auditee activities. The result would not be more work undertaken but more effective use of audit resources

Improved Resource Management. This would be as a result of improved information on audits in progress.

Improved Audit Quality. This would result from the use of computer assisted audit techniques to assist in the evaluation process in audits. It would also result from closer involvement of senior staff in audits once staff were freed from the considerable manual effort involved with the current manual information systems.

Increased Auditor Productivity. Some improvement in auditor productivity would result from the introduction of Audit Support facilities, Office Automation and Office Information facilities. However, such an increase would be channelled into improved audit quality or into undertaking more audit tasks, and would therefore be difficult to measure.

- 1.4. The AAO attempted to develop quantitative benefits to support its proposal and could have used these to determine a nominal cost/benefit ratio. However, because of the nature of the calculations, they would have been difficult to substantiate over time. The AAO does not believe it should support its proposal with figures that cannot be verified over time with empirical evidence: we would indeed be critical of any auditee that purported to do so. Moreover, the AAO considers the proposal is adequately justified on the basis of the identified qualitative benefits and would recognise a similarly justified qualitative assessment of benefits proposed by auditees.
- 1.5. It is however the AAO's intention to take steps to assess the level of success in achieving its objectives. As part of developing each System Proposal, the objectives and anticipated benefits of the system will be stated and will be assessed over time in qualitative and, where possible, in quantitative terms.

2. STAFF AND NON-STAFF ABSORBED COSTS

2.1. The DP Strategic Plan, and the cost schedule included with the original JCPA Submission, attempted to identify the total cost of the project including all staff costs and associated overheads. This included both full-time and part-time assistance from existing staff. In accordance with the guidelines for preparing DP Strategic Plans, contained in Personnel Management Manual Volume 4, the staff costs included an 85% overhead component.

2.2. The main difficulty we have had is in explaining that this approach, albeit literally in accord with the strategic planning guidelines, led to the inclusion of a large notional cost element, having no budgetary implications. This is because the user staff, audit review staff, and some of the DP staff involved in the project are accommodated within existing AOSL limits. Only those staff which require additional AOSL cover lead to an incremental cost in a budgetary sense.

2.3. In an endeavour to overcome confusion arising from that presentation, the revised cost schedule omits both the direct and overhead costs associated with the staff accommodated within existing AOSL levels. In relation to the staff for which additional AOSL cover is needed, the revised cost schedule includes only direct costs.

In the original cost schedule provided to the Committee, the DP staff "absorbed" costs related to the existing 10 AOSL cover allocated to the Computer Services Section (costed at \$60,000 per person including the 85% overhead component). The User Staff figures were derived from Section 8 of the DP Strategic Plan. The Audit Review component was included to acknowledge the importance of this requirement.

2.4. The revised cost schedule has recognised that there will be a need for additional AOSL cover of 3 to allow for the establishment of an Information Management Section outside DP Branch. An outline of the functions of this section was included as Attachment F to the supplementary submission of 10 April 1986.

2.5. The non-staff absorbed costs in the original cost statement were "Computer Time for CAATs" (\$1.1m) and "Existing DP expenditure" (\$0.99m).

2.6. The "Computer Time for CAATs" absorption was identified because it represented expenditure essential to the audit task and would be required even if the acquisition proposal was not proceeded with.

2.7. As already indicated, the subtraction of the "Computer Time for CAATs" item has caused confusion. In hindsight, it should not have been subtracted as it was not included in the "Computer Time" item. The result of the subtraction was that \$1.1m of the \$1.48m for computer time was shown as "absorbed".

2.8. The "Existing DP expenditure" item in the original cost schedule represents the progressive absorption of the existing Computer Services budget as the acquisition proposal takes effect.

2.9. The revised costing submitted to the Committee more simply represents the total expenditure for both existing commitments and the proposed acquisition. The existing budget (\$380,000 p.a.) is subtracted as the last item, thus highlighting the difference between the total expenditure and the additional expenditure.

3. RECONCILIATION OF ORIGINAL AND REVISED COST SCHEDULES

3.2. The overall increase in additional expenditure was from \$12.8m to \$15.2m. The major components of this increase are as follows:

(a) increase in "Mainframe Hardware" and "Operational & Development Software" of \$1.6m. This was due to the costing deficiencies identified in the report by Mr Angeloro, and

(b) increase in "Ongoing Costs" of \$0.8m. The major component of this is an additional \$660,000 for "Software Lease/Maintenance" as identified in the report by Mr Angeloro.

4. RFT STRUCTURE AND EVALUATION METHODOLOGY

4.1. The structure of the RFT and the evaluation methodology is an important issue that must be resolved before the AAO can proceed with the development of its RFT.

4.2. Further to the evidence given by Mr Angeloro at the public hearing, the AAO has checked the document inviting expressions of interest in providing consultancy services under which Mr Angeloro has been engaged. This document stated:

"The second part [of the assignment] is a review of subsequent progress with the development of the RFT and the development of an evaluation methodology in accordance with the DOLGAS ADP Acquisition Guidelines (May 1981)."

A copy of the document is attached.

4.3. The decision to seek a consultant to establish the evaluation methodology for the AAO acquisition arose from the concern that the evaluation methodology was a critical factor in ensuring that the AAO obtained the most appropriate solution to its requirements. Mr Angeloro was requested to develop an evaluation methodology in accordance with the DOLGAS guidelines.

4.4. The reports prepared by Mr Angeloro, as part of his consultancy assignment, outline his perceived problems with the existing guidelines as they relate to the AAO acquisition and recommend an alternative RFT structure and evaluation methodology. The evaluation methodology was discussed with officers of DOLGAS on 20 March 1986. A response from DOLGAS was subsequently received noting some difficulties with the proposed methodology.

4.5. The initial AAO reaction to this proposed evaluation methodology was favourable in that it appeared to be in accord with the spirit of the guidelines and overcame some of the perceived problems. The major advantage is that the proposal allowed the many varied elements in the proposal to be weighted differently and thus allowed the evaluation methodology to be more specifically tailored to take account of the differing characteristics of the various elements.

4.6. The problems anticipated by the AAO in relation to the existing RFT structure are as follows:

(a) the existing DOLGAS "Pro-Forma M" RFT does not easily accommodate the anticipated requirement for 20 part tenders, to maximise Australian and small vendor participation. A list of the anticipated part tenders is attached, and

(b) the AAO RFT is expected to exceed 1,000 pages of which a single part tenderer may be required to respond to less than 100 pages. Under the current Pro-forma M each part tenderer is required to read, interrogate and understand the entire document to ensure their response is complete and accurate.

4.7. The advantages of the RFT structure proposed by Mr Angeloro are as follows:

(a) a part tenderer will be able to assess the relevance of each section and then respond to the requirements specified in a single complete section

(b) the RFT specification team are able to focus on a complete part tender by consolidating these issues into one single section. This expedites the preparation, review and management acceptance of the RFT document, and

(c) the effort expended in developing detailed questionnaires to be included in the RFT significantly reduces the time taken to ascertain relevant information during the evaluation process. It also minimises the potential for errors resulting from the evaluation team having to ascertain information from brochures and other reference material supplied by the vendor.

4.8. One reservation concerning the proposed structure relates to the segmentation of the RFT into part tenders. As proposed, this structure may cause some difficulties in assuring that the proposed solution is adequately integrated across all the part tenders.

4.9. To overcome this reservation it is proposed to include a section detailing the integration requirements in each separate part tender. It is also intended to discuss with DOLGAS the feasibility of including the integration requirements in the evaluation methodology.

4.10. The AAO is concerned that the accepted interpretation of the existing evaluation methodologies, as specified in the DOLGAS guidelines, will not necessarily lead to the selection of the best solution for the requirements of the Office. It is important to note that the DOLGAS guidelines contain only a very brief outline of each methodology.

4.11. In some areas of the tender it is possible for low cost to dominate requirements inappropriately and lead to a solution which will adversely effect the strategic development of the AAO requirements. The DOLGAS suggested solution to this problem is assign the weightings carefully. The AAO considers that this is an inappropriate solution to a problem with the guidelines as vendor costings would need to be anticipated before the tender closed in order to ensure the weightings were adjusted appropriately.

- 4.12. The proposed evaluation methodology allows cost to be weighted against requirements. This weighting process would be identified in the RFT allowing vendors to assess the effect of a low cost solution against technical and non-technical compliance.
- 4.13. The AAO is also concerned that, as a first time user, the level of support offered by the successful vendor is an important factor in minimising the risk to the AAO of technical problems adversely affecting the project. The proposed RFT structure and evaluation methodology cater for this both in the cost model and in the assigning of weightings for identified potential risks related to particular solutions.
- 4.14. In general, the AAO is of the opinion that the proposed evaluation methodology represents a fair and defensible means of evaluating the various complex tender responses. The AAO has further reviewed the methodology as submitted by Mr Angeloro and is of the opinion that with some relatively minor revision it falls within the existing guidelines. It should be noted that the existing guidelines outline, in very brief terms only, a series of possible evaluation methodologies. The approach proposed by Mr Angeloro is consistent with the "Weighted-Scoring Technique" included in the guidelines.
- 4.15. It is anticipated that agreement with DOLGAS can be reached on both the RFT structure and the evaluation methodology. Progress in this regard will be advised to the Committee.

5. IBM COMPATIBLE REQUIREMENT AS "DESIRABLE"

- 5.1. DOLGAS has indicated that it may accept that the AAO requirement for an IBM compatible mainframe be rated only as a "desirable" requirement in the RFT. The AAO is of the opinion that this both presents practical difficulties in the tendering process and also does not recognise the AAO's declared strategic requirement to acquire an IBM compatible mainframe.
- 5.2. The specification in the RFT of an IBM compatible mainframe would allow for certain technical assumptions to be made, both in the hardware and software specification. If an IBM compatible environment were "desirable" and not "mandatory" then the complexity of the specification would need to increase significantly to ensure an IBM compatible solution could be evaluated against a non-IBM compatible solution. This specification could leave the AAO open to the criticism of being less than frank in its specification, which might be said to be biased toward an IBM compatible solution.
- 5.3. The AAO believes that it should clearly express its strategic requirement for an IBM compatible mainframe and to develop evaluation criteria appropriate to that requirement. This would ensure that vendors did not unnecessarily commit large resources to submitting inappropriate tenders which had little prospect of success.
- 5.4. If the IBM compatible requirement were "mandatory" then the AAO would be able to specify a network architecture that would be able to link into the IBM compatible mainframe and provide a strategic base for the introduction of future technology. If the IBM compatible requirement were "desirable" only, and other than an IBM compatible mainframe was finally selected, then the network architecture would be essentially dictated by the mainframe selection. This could lead to an unacceptable overall solution.
- 5.5. If a non-IBM mainframe were selected then the requirements of the network would change to ensure an adequate compatible architecture could be selected. That is, to ensure the requirements of the AAO are satisfied, the specification of the network would have to include, as a mandatory requirement, a common architecture and compatible processors and software across both the central mainframe and the network. This compatibility across the mainframe and network is not required if the central mainframe is IBM compatible due to the defacto industry standard architecture of an IBM compatible mainframe.
- 5.6. In summary, the requirement that an IBM compatible mainframe be specified as "desirable" leads to the need to include in the RFT two alternative network specifications. The task of specifying and evaluating under such circumstances is considered impracticable. The AAO considers that it is essential that the IBM compatible requirement be specified as "mandatory".

LIST OF PART TENDERS

Central Computer Facility (Prime Contract)  
Central Mainframe  
Mass storage  
Tape drives  
Central printers  
Communications front-end  
Central Mainframe operating system and utilities  
Central Mainframe communications software  
(transaction-processing monitor)

Data & Resource Access Control System

Data & Resource Monitoring System

Disk Management System

Tape Management System

Library (Source Code, Object Code, Executable Code) Management System

Data Directory, Data Base Management and 4th Generation Development Tools

CAATs (Computer Assisted Audit Techniques) Development Tools

Text Storage, Maintenance and Retrieval System

Network (Prime Contract)  
Network architecture  
Communications gateway to central mainframe  
Central Office and Regional nodes  
Communications and operating system software  
Communications devices  
Encryption and network security devices

Workstations  
Networked workstations  
Personal Computers  
Word Processors  
Portable PC's

Printers

Word Processing Software

Spreadsheet Software

Office Automation Environment

Applications Integrator

Network CAATs Development Tools

Maintenance of Existing PC's and Peripherals

Facilities Management and Integration Support

Expressions of Interest for Application Software

APPENDIX 8

Australian Audit Office Letter of  
14 May 1986



COMMONWEALTH OF AUSTRALIA

AUSTRALIAN AUDIT OFFICE

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Please quote: M86/100

Secretary  
Joint Parliamentary Committee of Public Accounts  
Parliament House  
CANBERRA. A.C.T.

COMPUTER ACQUISITION PROPOSAL BY THE AAO

1. The attached information is provided in response to the requests for further information made during the visit to the Victorian Regional Office of the AAO on Friday 9 May 1986, as clarified between Dr Capp of the Secretariat and Mr Rossell of the AAO.

2. For further information please contact Mr Bruce Rossell, Director Computer Services, on 484805.

M. J. Shanahan  
Assistant Auditor-General  
DP Branch  
14 May 1986

1. REVISED COST SCHEDULE

- 1.1. The DP Strategic Plan, and the cost schedule included with the original JCPA Submission, attempted to identify the total cost of the project including all staff costs and associated overheads. This included both full-time and part-time assistance from existing staff. In accordance with the guidelines for preparing DP Strategic Plans, contained in Personnel Management Manual Volume 4, the staff costs included an 85% overhead component.
- 1.2. This cost schedule was included with our Cabinet Submission requesting in-principle approval for the acquisition. In that submission, the AAO recommended that Cabinet note that the proposal be taken up as technical new policy in the 1986-87 Budget context when more precise estimates would be available. Following the Cabinet Decision in December 1985, the AAO has continued to refine its cost estimates through discussions with vendors. In addition, Mr Angeloro was asked to review the cost schedule to provide an independent assessment of their adequacy.
- 1.3. Following the preparation of the original submission to the JCPA, the AAO became aware of elements of the cost schedule that required revision. Mr Angeloro identified some areas of inadequate estimates associated with the mainframe and the associated software products. In addition, the JCPA consultants report indicated difficulty in assessing the adequacy of the estimates and with the interpretation of the "absorbed" costs. As a result, the AAO developed a revised cost schedule taking into account the comments from Mr Angeloro and the JCPA consultant. This revised cost schedule was included with the supplementary submission to the JCPA of 10 April as Attachment C and represents the most accurate estimates based on the information to-date. It does not attempt to "absorb" any costs but has been broken down into more detailed components to allow for comment on the basis of the cost estimates.
- 1.4. The AAO recognises that exact costings can only be determined following the tender evaluation and the current figures reflect the current best estimate that will allow the AAO's requirements to be adequately met.



2. **STAFF RELATED ABSORBED COSTS**

2.1. The annual salaries vote for the AAO is approximately \$18 million. In the original cost schedule the total staff absorbed costs ranged from \$2.4m to \$1.4m per year, including the overhead component, or about 8% to 5% of the annual salary expenditure after the overhead component is deducted. The following table translates the dollar figures in the original cost schedule to man months, based on the average salary of \$60,000 including overheads. For User Staff, the man month figures relate approximately to the number of man months shown in Section 8.2.2 of the DP Strategic Plan. The figures in the DP Strategic Plan were reviewed and revised before finalising the cost schedule for the Cabinet Submission.

	1985/86	1986/87	1987/88	1988/88	1989/90
<b>DP Staff</b>					
Original Cost Statement (\$)	-600	-600	-600	-600	-600
Man Months	120	120	120	120	120
<b>User Staff</b>					
Original Cost Statement (\$)	-360	-780	-1,800	-1,000	-960
Man Months	72	144	360	200	192
Man Months - DP Strategic Plan (Section 8.2.2)	64	128	297	172	163
<b>Audit Review</b>					
Original Cost Statement (\$)		-30	-60	-60	-30
Man Months		6	12	12	6