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ELECTRONIC RECORDS PROGRAMS
REPORT ON THE 1994/95 SURVEY

COMMITTEE ON ELECTRONIC RECORDS

DECEMBER 1996

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Preface This is one of a series of products that has been prepared by the ICA Committee on Electronic Records. The mandate of the Committee, which was established in 1993, is to undertake study and research, promote the exchange of experience and draft standards and directives concerning the creation and archival processing of electronic records. The three products are as follows: *Guide for Managing Electronic Records from an Archival Perspective*. The Guide is designed to help archival institutions reposition themselves to address the management of archival electronic records. Part I begins with an overview of the technological, organizational and legal trends that are having an impact on the ability of organizations, including archives, to keep and manage records that are in electronic form. It continues with a discussion of key concepts such as "record" and "record keeping" describing how these are impacted upon in the electronic environment, and then proposes strategies for accomplishing the life-cycle management of electronic records. Part I concludes by describing - from the legal, organizational, human resources and technological perspectives - the implications for archives of repositioning themselves to manage archival electronic records. Over time, implementing the proposed strategies will require the crafting of tactics, including standards, which can be recommended for adoption by archives. Part II of the Guide represents a first attempt by Committee members to articulate such a tactical approach. It is anticipated that the contents of Part II will be expanded over time, and that it will form the basis for the development of a series of recommendations to guide archives at the "how to" level. *Electronic Records Programs: Report on the 1994/95 Survey*. The purpose of the survey, which was generously supported by the Centre des Archives contemporaines [Les Archives nationales de France] and the National Archives of Singapore, was to compile a directory of those archival institutions that have established or are planning to establish a program to manage electronic records. The directory is intended to facilitate information sharing and to highlight problem areas that the Committee should address. It is also intended to serve as a baseline upon which progress in establishing electronic records programs at the international level can be assessed through time. As well as a report on the findings of the survey, the product contains detailed tables describing information on the organizational and legal frameworks for electronic records programs, their program structures, and their technical specifications, information holdings, and access provisions. *Electronic Records: Literature Review*. Based on an exhaustive review of the international literature on electronic records, Alf Erlandsson of the International Monetary Fund produced for the use of the Committee a substantial document that provided an excellent overview of the evolution that has taken place in the concepts and strategies related to the management of electronic records from an archival perspective. The Committee concluded that because the literature review could help archivists understand the broad context within which strategies such as those discussed in the Committee's draft Guide have been placed, it should be made available more broadly. It is hoped that the literature review will provide an important tool for use in education and training programs that focus on electronic records. The literature review will be updated periodically. All three products are available from the Chair of the Electronic Records Committee (see address below) in both electronic (WordPerfect 5.2, or ASCII) and hard copy form or by accessing the ICA web site at <http://www.archives.ca>. These products reflect the collective thinking of the members of the Electronic Records Committee based on four meetings, considerable work between meetings and extensive consultation with colleagues in a variety of countries that share a common concern about the management of archival electronic records. The members of the Committee are very grateful to the ICA Programme Commission and the Secretariat of the ICA for their support and assistance and to the national archives that provided their generous sponsorship of Committee meetings and travel. They are also grateful to Margaret Hedstrom of the University of Michigan (School of Information) who edited the Guide and Ginette Fauvel and Cécile Sauvé of the National Archives of Canada for the preparation, formatting and dissemination of the various drafts of the Guide and for their assistance in the organization of the consultation session in Beijing.

Before making the products available formally to the international archival community, the Committee established a consultation process to solicit comments. An important step in the process was a one-day consultation session held during the ICA Congress in Beijing. Although the results of the process, which was concluded in September 1996, were incorporated into the final products, the Committee recognizes that changes in technology, record keeping and the role of the archives will require the products to be updated on a periodic basis. The Committee also recognizes that the successful implementation of electronic records programs will require the development of more detailed guidelines for use by archives in dealing at the practical level with the management of archival electronic records. Also, carefully designed standards strategies and the adoption of relevant training and education methodologies will be needed. These, together with strategies for facilitating the establishment of electronic records programs (e.g. based on pilot projects), should become the focus of attention in the future. For additional information on the products of the Committee on Electronic Records please contact: International Council on Archives, Secretariat, 60 rue des Francs-Bourgeois, 75003 Paris, France. The members of the Committee on Electronic Records are: Peter Anderson, Scottish Record Office; Niklaus Buetikofer, Federal Archives of Switzerland; Michèle Conchon, National Archives of France; Ivar Fonnes, National

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Archives of Norway; Hans Hofman, National Archives of the Netherlands; Gertrude Long, International Monetary Fund; John McDonald (Chair), National Archives of Canada; Steve Stuckey, Australian Archives; Ken Thibodeau (Secretary), U.S. National Archives and Records Administration; Pitt Kuan Wah, National Archives of Singapore.

Préface Le présent document fait partie d'une série de trois produits préparés par le Comité du CIA sur les documents électroniques. Ce comité, créé en 1993, a reçu le mandat de mener des études et des travaux de recherche, de promouvoir l'échange d'expériences et de rédiger des projets de normes et de directives sur la création et l'archivage des documents électroniques. Les trois produits sont les suivants : *Guide pour la gestion des documents électroniques du point de vue archivistique*. Le Guide est conçu pour aider les institutions d'archives à se repositionner de manière à régler le problème de la gestion des documents d'archives électroniques. Dans la Partie I, on fait un survol des tendances technologiques, organisationnelles et juridiques qui influent sur la capacité des organisations, dont les institutions d'archives, à conserver et à gérer des documents sous forme électronique. On poursuit la discussion des concepts clés comme le « document » et « la tenue des documents », on décrit l'influence du contexte électronique et on avance des stratégies pour gérer les documents électroniques pendant tout leur cycle de vie. Enfin, on conclut par une description des répercussions que le repositionnement des archives à des fins de gestion des documents d'archives électroniques pourrait avoir sur le plan juridique et organisationnel, sur les ressources humaines et sur la technologie. Au fil des années, la mise en œuvre des stratégies proposées nécessitera l'élaboration de tactiques, notamment de normes, qui devront être adoptées par les institutions d'archives. Quant à la Partie II, elle se veut une première tentative des membres du Comité pour formuler une telle approche tactique. On prévoit que le contenu de la Partie III sera élaboré plus tard et qu'il servira de fondement à l'élaboration d'une série de recommandations pratiques. *Programmes de gestion des documents électroniques : Rapport de l'étude de 1994-1995*. L'étude, généreusement financée par le Centre des Archives contemporaines [Les Archives nationales de France] et les Archives nationales de Singapour, visait à dresser un répertoire des institutions d'archives qui ont mis en place – ou qui comptent le faire – un programme de gestion des documents électroniques. Le répertoire doit servir à faciliter l'échange d'information et à mettre en évidence les secteurs problématiques dont devrait s'occuper le Comité. Il doit aussi servir d'étalon pour évaluer à la longue les programmes de gestion des documents électroniques qui seront établis à l'échelle internationale. Ce document contient, en plus des constatations de l'étude, des tableaux d'information détaillée sur les cadres organisationnels et juridiques des programmes de gestion des documents électroniques, leurs structures et leurs caractéristiques techniques, des fonds de renseignements et des dispositions d'accès. *Documents électroniques : Analyse de la littérature*. Au terme d'une analyse complète de la littérature internationale sur les documents électroniques, Alf Erlandsson, du Fonds monétaire international, a produit à l'intention du Comité un volumineux document qui donne un excellent aperçu de l'évolution des concepts et des stratégies concernant la gestion des documents électroniques du point de vue archivistique. Le Comité a conclu en disant que l'analyse devrait être plus largement diffusée puisqu'elle est susceptible d'aider les archivistes à comprendre le vaste contexte dans lequel se retrouvent les stratégies dont il est question dans l'ébauche du Guide du Comité. Il est à espérer que l'analyse de la littérature deviendra un outil important des programmes d'études et de formation qui portent sur les documents électroniques. Enfin, les données de l'analyse seront mises à jour régulièrement. On peut se procurer ces trois documents en s'adressant au président du Comité sur les documents électroniques (dont l'adresse suit) soit sous forme électronique (WordPerfect 5.2 ou ASCII) ou sur support papier. On peut aussi accéder au site WEB du CIA à l'adresse <http://www.archives.ca>. Ces produits sont le fruit de l'effort de réflexion collectif des membres du Comité sur les documents électroniques qui se sont réunis à quatre occasions, de la somme considérable de travail qu'ils ont abattu entre ces réunions et de la longue consultation qu'ils ont menée auprès de leurs collègues dans une foule de pays qui partagent un même souci quant à la gestion des documents d'archives électroniques. Les membres du Comité sont extrêmement reconnaissants envers la Commission du Programme du CIA et le Secrétariat du CIA qui leur ont assuré soutien et aide ainsi qu'envers les Archives nationales qui ont si généreusement parrainé leurs réunions et leurs déplacements. Ils remercient aussi Margaret Hedstrom, de l'University of Michigan (School of Information), pour avoir révisé le Guide et Ginette Fauvelle ainsi que Cécile Sauvé, des Archives nationales du Canada, qui ont veillé à la préparation, à la mise en page et à la diffusion des diverses ébauches du Guide et qui ont aidé à organiser la séance de consultation à Beijing. Avant de diffuser officiellement ces produits au sein de la collectivité archivistique internationale, le Comité a mis en place un processus de consultation pour recueillir des commentaires. Une des étapes cruciales du processus était une consultation d'une journée pendant le Congrès du CIA à Beijing. Même si les résultats de cette consultation qui a été menée en septembre 1996 ont été intégrés aux produits finaux, le Comité reconnaît qu'à la suite des changements qui surviennent dans la vocation des archives ainsi que dans les domaines de la technologie et de la tenue des documents, il faudra constamment les mettre à jour. Il reconnaît aussi que la réussite de la mise en œuvre de programmes de gestion de documents électroniques dépendra de l'élaboration de lignes directrices plus détaillées à l'intention des archives en ce qui a trait à la gestion pratique des documents d'archives électroniques. De plus, il faudra élaborer des stratégies de normalisation bien pensées et adopter des méthodes de formation pertinentes. C'est sur ces méthodes jointes aux stratégies destinées à faciliter l'établissement de programmes de gestion de documents électroniques (à la suite de projets pilotes) qu'on devrait désormais porter

l'attention. Pour plus d'information sur les produits du Comité sur les documents électroniques, veuillez vous adresser au : Conseil international des Archives, Secrétariat, 60, rue des Francs-Bourgeois, 75003 Paris, France. Voici les membres du Comité sur les documents électroniques : Peter Anderson, Bureau des archives d'Écosse; Niklaus Buetikofer, Archives fédérales de Suisse; Michèle Conchon, Archives nationales de France; Ivar Fonnes, Archives nationales de Norvège; Hans Hofman, Archives nationales des Pays-Bas; Gertrude Long, Fonds monétaire international; John McDonald (président), Archives nationales du Canada; Steve Stuckey, Archives d'Australie; Ken Thibodeau (secrétaire), Archives nationales des États-Unis et Administration des documents; Pitt Kuan Wah, Archives nationales de Singapour.

Summary This Guide is one of a series of products prepared by the ICA Committee on Electronic Records. The mandate of the Committee, which was created in 1993 and concluded its work in 1997, was to undertake study and research, promote the exchange of experience and draft standards and directives concerning the creation and archival processing of electronic records. In addition to the Guide, the Committee also produced the results of a 1994/95 Survey of ICA members, to determine those that have established or are planning to establish a program to manage electronic records, and a Literature Review designed to provide an overview of the evolution that has taken place in the concepts and strategies related to the management of electronic records from an archival perspective. The Guide is designed to help archival institutions address the management of electronic records. Part I examines the technological, organizational and legal trends impacting on the ability of institutions (including archives) to manage these records, presents a discussion of the concepts of "record", "record keeping", "electronic record", and other related terms which were developed for the purposes of the Guide and proposes strategies for the management of electronic records. Part I concludes with some discussion about the implications for archives as they reposition themselves to manage electronic records of archival value. Part II of the Guide describes the first of a number of the tactics archives can use to implement the strategies described in Part I. Part I is divided into four chapters. Chapter One discusses the significant changes that are taking place in information technology and the extent to which this is having an impact on record keeping and records management. Organizational trends are also examined from a record keeping perspective with special attention being given to the impact of re-engineering, downsizing and restructuring on the approach taken by modern governments to the keeping of their records. The evolution taking place in the legislative and policy environment is also examined in terms of their impact on the conception, creation, and maintenance of electronic records. Overall, the chapter defines the technological, organizational and legal landscape within which most modern archives operate today, and describes how that landscape will influence the strategies and options that archival institutions will need to pursue. Chapter Two presents the basic concepts that constitute the framework for the strategies presented in the Guide. For the purposes of the Guide, the Committee developed the following concept of "record": *A record is recorded information produced or received in the initiation, conduct or completion of an institutional or individual activity and that comprises content, context and structure sufficient to provide evidence of the activity regardless of the form or medium.* The distinctive feature of electronic records is that the content is recorded on a medium and in symbols (binary digits) that needs a computer or similar technology to read and understand. The concepts of "record" and "electronic record" are linked to the concept of the "archival function" which was defined by the committee as that group of related activities contributing to, and necessary for accomplishing the goals of identifying, safeguarding and preserving archival records, and ensuring that such records are accessible and understandable. These concepts are used to explain that traditional practices employed for managing records may not be sufficient to ensure authentic and reliable records and that if such records are to be preserved as archival electronic records, archives will need to position themselves at the conception stage, even before records are created. Based on the concepts described in the second chapter, Chapter Three proposes strategies for accomplishing the life cycle management of archival electronic records. While recognizing that the legal mandates, the resources, and the circumstances of archives vary significantly, the Committee made the following general recommendations concerning the strategies that archives should pursue:

1. The archives should be involved in the entire life cycle¹ of electronic systems that create and retain archival electronic records to ensure the creation and retention of electronic records that are authentic, reliable and preservable.
2. The archives should ensure that records creators create and retain records which are authentic, reliable and preservable.
3. The archives must manage the appraisal process and exercise intellectual control over archival electronic records.
4. The archives must articulate preservation and access requirements to ensure that archival electronic records remain available, accessible, and understandable.

Chapter 4 examines the strategies raised in the third chapter in terms of their organizational, legal and technological implications for archives. It explains these implications in order to help archives establish checklists of the things they will need to consider as they move into a position to influence policy, standards, and the design of record keeping systems. For instance, an archives that strives to position itself at the front end of the records life cycle may need to adjust its enabling legislation or identify new training and education requirements or even job requirements to ensure that it has the staff in place to accomplish the task. Part II of the Guide, represents a first attempt by Committee members to articulate tactical approaches to the management of archival electronic records based on the concepts and strategies discussed in Part I.

Section A contains the first in what is intended to be a series of discussion papers exploring issues associated with identifying and managing the various categories of electronic records commonly found in many organizations. The first paper focuses on records in a database environment. Section B is intended to elaborate upon the strategies described in Chapter 3 of Part I by presenting methods and tactics that can be employed by an archives to address the management of archival electronic records. The first contributions focus on preservation and access. The work of the committee in preparing this guide was based on the personal knowledge and experience of committee members as well as an extensive review of the international literature. No specific references are included in the Guide because they are already contained in the comprehensive literature review mentioned above. The committee is grateful for the contributions that have been made by experts around the world either in the literature or through personal conversations.

SommaireLe présent document fait partie d'une série de trois produits préparés par le Comité du CIA sur les documents électroniques. Ce comité, créé en 1993 et dont les activités ont pris fin en 1997, avait reçu le mandat de mener des études et des travaux de recherche, de promouvoir l'échange d'expériences et de rédiger des projets de normes et de directives sur la création et l'archivage des documents électroniques. Outre le Guide, le Comité a également publié les résultats d'une étude menée en 1994-1995 auprès des membres du CIA, afin de déterminer lesquels d'entre eux avaient mis en place - ou comptaient le faire - un programme de gestion des documents électroniques. Une analyse de la littérature du domaine a été menée pour donner un aperçu de l'évolution des concepts et des stratégies concernant la gestion des documents électroniques du point de vue archivistique. Le Guide est conçu pour aider les institutions d'archives à gérer les documents électroniques. Dans la Partie I, on fait un survol des tendances technologiques, organisationnelles et juridiques qui influent sur la capacité des organisations, dont les institutions d'archives, à gérer ces documents. On discute également divers concepts comme le « document », la « tenue des documents », le « document électronique » et d'autres termes qui ont été définis aux fins du Guide et on avance des stratégies pour gérer les documents électroniques. On conclut par une discussion portant sur les répercussions que pourrait avoir le repositionnement des institutions d'archives afin d'assurer la gestion des documents électroniques ayant une valeur archivistique. Quant à la Partie II, elle décrit la première de diverses tactiques dont pourraient se servir les archives pour mettre en œuvre les stratégies énoncées dans la Partie I. La Partie I comprend quatre chapitres. Le chapitre I est une discussion des changements importants qui se produisent en technologie de l'information et leur incidence sur la tenue et la gestion des documents. On examine aussi les tendances organisationnelles du point de vue de la tenue des documents en accordant une attention spéciale aux répercussions de la restructuration organisationnelle et la réduction des effectifs sur la façon dont les administrations modernes conservent leurs documents. On se penche aussi sur l'évolution du milieu législatif et administratif, en raison de leurs conséquences sur la conception, la création et le maintien des documents électroniques. Bref, ce chapitre brosse le tableau technologique, organisationnel et juridique dans lequel évoluent la plupart des archives modernes et décrit comment ces facteurs influenceront sur les stratégies et les options que devront suivre les institutions d'archives. Le chapitre II renferme les concepts de base qui forment le cadre des stratégies dont il est question dans le Guide. Aux fins du Guide, le Comité a défini le concept de « document » comme suit : *Un document est de l'information consignée, créée ou reçue au moment d'amorcer, d'effectuer ou de compléter les activités menées par une institution ou une personne et qui présente un contenu, un contexte et une structure permettant de prouver l'existence de ces activités, indépendamment de la forme ou du support.* Les documents électroniques ont une caractéristique distincte : étant consigné sur un support informatique et en symboles (chiffres binaires), leur contenu ne peut être lu et compris qu'au moyen d'un ordinateur ou d'une technologie assimilée. Les concepts de « document » et de « document électronique » sont liés au concept d'« archivage », fonction qui a été définie par le Comité comme étant un groupe d'activités connexes nécessaires à l'atteinte des buts relatifs à l'identification, à la protection et à la préservation des archives, tout en veillant à ce qu'elles soient accessibles et compréhensibles. Ces concepts servent à expliquer que les pratiques traditionnelles de gestion des documents peuvent s'avérer insuffisantes pour assurer l'authenticité et la fiabilité des documents et que la préservation de ces documents en tant que documents d'archives électroniques suppose que les institutions d'archives se repositionnent dès l'étape de la conception des documents, avant même leur création. Reprenant les concepts décrits au chapitre précédent, le chapitre III propose des stratégies visant à gérer les documents d'archives électroniques pendant tout leur cycle de vie. Même s'il reconnaît que les mandats, les ressources et les circonstances peuvent varier énormément entre les institutions d'archives, le Comité a fait les recommandations générales suivantes à propos des stratégies que ces dernières devraient poursuivre :

1. Les institutions d'archives doivent participer tout au long du cycle de vie¹ des systèmes électroniques qui créent et conservent des documents sur support électronique afin de garantir la création et la préservation de documents électroniques authentiques, fiables et durables.
2. Les institutions d'archives doivent veiller à ce que les créateurs se soucient de l'authenticité, de la fiabilité et de la durabilité des documents qu'ils créent et conservent.
3. Les institutions d'archives doivent exercer un contrôle intellectuel sur les documents d'archives électroniques et en gérer le processus d'évaluation.
4. Les institutions d'archives doivent formuler les exigences en matière de préservation et d'accès afin que les documents d'archives électroniques demeurent disponibles, accessibles et compréhensibles.

Dans le chapitre IV, on examine les stratégies soulevées dans le chapitre précédent et leurs répercussions organisationnelles, juridiques et technologiques sur les archives. On explique ces répercussions afin d'aider les institutions d'archives à dresser des listes de vérification des choses dont elles devront tenir compte pour se positionner de manière à influencer la politique, les normes et la conception des systèmes de tenue des documents. Prenons le cas d'une institution d'archives qui cherche à se positionner au tout début du cycle de vie : elle devra peut-être faire modifier sa législation habilitante ou cerner ses nouveaux besoins de formation ou même d'embauche pour s'assurer qu'elle a tout le personnel nécessaire pour s'acquitter de la tâche qui lui est confiée. La Partie II du Guide constitue la première tentative des membres du Comité pour formuler des approches tactiques en matière de gestion des documents d'archives électroniques qui soient fondées sur les concepts et les stratégies discutés dans la Partie I. La section A renferme le premier document de discussion de toute une série portant sur des questions d'identification et de gestion des diverses catégories de documents électroniques que l'on retrouve dans bien des organisations. Ce document traite surtout des documents dans des bases de données. La section B vise à raffiner les stratégies décrites dans le chapitre III de la Partie I en présentant des méthodes et des tactiques dont pourrait se servir une institution d'archives pour gérer ses documents d'archives électroniques. Ces premières contributions ont d'abord trait à la préservation et à l'accès. En préparant le Guide, les membres du Comité se sont inspirés de leur bagage de connaissances personnelles et de leur expérience et d'une analyse complète de la littérature du domaine à l'échelle internationale. Le Guide ne renferme aucune référence précise, puisque qu'on retrouve ces références dans l'analyse mentionnée ci-dessus. Le Comité tient à remercier les spécialistes du monde entier pour leurs précieuses contributions obtenues sous forme d'écrits ou lors de conversations personnelles.

1/ Le « cycle de vie » des documents comprend trois étapes fondamentales : la conception, la création et le maintien (y compris la préservation et l'utilisation).

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Chapter 1

Introduction

The ICA's Committee on Electronic Records, with the generous support of the Centre des Archives contemporaines « Archives nationales de France » and the National Archives of Singapore, conducted an international survey between October 1994 and September 1995 to gather information on electronic record keeping in archival institutions. The purpose of the survey was to compile a directory of archival institutions that have established or are planning to establish a program to manage electronic records. The directory is intended to facilitate information sharing and to highlight problem areas that the Committee should address. It is also intended to serve as a base line upon which progress in establishing electronic records programs can be assessed through time.

The survey form (see Annex 1) was distributed to 187 ICA Category A members in two phases. During the first phase, between October and December 1994, the survey instrument was sent to 15 national archives in Asia. This pilot phase enabled the Committee to test and refine the questionnaire. Phase II began in February 1995 when the modified survey form was mailed to all Category A members of the ICA (1994 Membership List).

The survey was restricted to Category A members because, as national/state or major institutional archives, they were expected to perform the full range of archival functions, from appraisal to disposition and preservation for all forms of records, including those produced electronically.

Chapter 2

General Observations

The majority of national archives that responded to the survey indicated that they did not keep electronic records, although many are expected to do so in the near future. Those who are in the planning stages were pleased to learn that there will an ICA guide to assist them.

The quality and extent of the responses to the survey varied considerably. Some provided considerable detail on their actual or potential program while others gave only the briefest information. For instance, many archives supplied only the titles of their data files rather than full descriptions.

Generally speaking, the response rate was below expectations. Of the 187 forms distributed jointly by the Centre des Archives contemporaines and National Archives of Singapore, 100 (i.e. 53.5%) responded. The relatively low response rate could be due to a combination of the following factors:

- survey form was lost in mail (both ways);
- survey form did not reach the right person;
- did not respond because the survey was not relevant at this time;
- no time to fill in the form.

Chapter 3

Summary of Findings

3.1 Identifying Electronic Records Programs

Of the 100 archives which responded to the survey, 65 (i.e. 65% or over 2/3 of the respondents) reported that they do not keep or manage electronic records. The remaining 35 institutions indicated that they either had programs in place or were ready to accept electronic records. However, when we examined the answers given more carefully, we discovered that the extent of their involvement with electronic records was more limited. For details, please refer to Table A.

3.2 Defining Electronic Records

Apparently not everybody was clear about the scope of the survey. When asked to list the types of electronic records in their holdings, some institutions included "microfilm", "microfiche" and "aperture cards". Although it might have been better to have defined what was considered to be an electronic record, it was an important lesson learned which led the Committee to spend much more time developing a conceptual definition of electronic records for use in the Guide.

3.3 Legal/Administrative Framework Governing Electronic Records

Table B shows the various legal and administrative frameworks under which these archives were mandated to preserve electronic records. The returns show that the majority of the archives which keep electronic records do so because the laws or certain administrative instructions have enabled them. We note that even in some archives where there is an absence of a specific law on electronic record keeping, the Archives Acts referred to by these archives were broad enough to include records that are generated from computers. Typically such Archives Acts define a "record" as "any medium in or on which information is recorded".

3.4 Structure/Programme to Manage Electronic Records

About half of the archives which keep electronic records reported that these records are managed by specific operational units/programmes which were established in the 1980s and 1990s, with the exceptions of USA (1972), Canada and Denmark (1973), and Romania (1976). Please refer to Table B.

However, the roles and responsibilities of these programmes/units may vary, from such basics functions as giving advice to providing a full range of archival functions from appraisal, scheduling, transfer, accessioning, processing (including format standardization), preservation and providing access and reference services. The archives in Germany (under Home Office), Canada, Denmark, USA, Finland, France, Norway and Switzerland are notable examples of archives providing a full range of archival functions.

In terms of human resources allocated to electronic records, the US Archives has the largest (30 - 22 archivists and 8 computer specialists). Most archives have less than 10 staff in total and most "archivists" are in fact historians who have pursued a subsequent specialization in records management. Specific electronic records programmes seldom include computer or IT specialists.

Archives which have not yet established formal programmes to handle electronic records are either in the process of setting up such programmes (eg conducting surveys, pilot studies, engaging consultants) or are planning either to train existing archives staff to handle electronic records or to buy services from state computer centres. Most of these archives, examples of which include: Australia (New South Wales, Victoria and Western Australia), Indonesia, Ireland, Malaysia,

Northern Ireland, New Zealand, the Netherlands, Singapore and South Africa are in the process of drafting policy guidelines and operating procedures relating to appraisal/acquisition, preservation and dissemination.

While some have not yet decided whether to accept physical transfer of electronic records from the creating agencies, a few have adopted a "distributed custody" approach, notably Australia. For details, please refer to Table C.

3.5 Technical Prescriptions

From the survey returns, it is clear that 9-track magnetic tape is the most popular storage medium in those archives that have long established electronic records programmes. This is understandable as most of the data sets were/are generated from mainframe computers and magnetic tape is considered to be a reliable and highly standardized medium. Notwithstanding this, some archives have begun to evaluate (or experiment with) other storage devices such as DAT (Digital Audio Tape), optical disk including both WORM (Write-Once-Read-Many) disk and CD-R (Compact Disk-Recordable). These alternate media are adopted by newly established electronic records programmes, in part, because of the relatively low cost.

As far as the logical preservation format is concerned, most archives only accept ASCII or EBCDIC (flat file) for structured data sets (usually from mainframe computers), although for older files, various formats have been accepted as long as they are adequately documented. The picture is far from complete, however, as increasingly many archives will soon receive or have received a wide variety of electronic records generated from PCS and mini-computers that could include data bases, word processing files, image files, compound documents and complex data sets such as GIS (Geographical Information System). Therefore, it is not surprising to see that many archives are now looking at format standardization.

With regard to the storage of electronic records, most archives reported that their records are kept in temperature and humidity controlled environments. Some have even specified that their tapes be refreshed (rewound) periodically. Similar to paper records, the physical access to electronic records was reported to be well protected. For details, please refer to Table D.

3.6 Electronic Records Holdings Profile

Table E gives an impression of the types of electronic records that these archives have acquired. As the scope of the survey was on national and state archives, it was not unexpected to find that the electronic records holdings of these archives came from various government and quasi-government agencies (including scientific institutions and universities.) As mentioned earlier, since most of the records transferred to these archives were generated by mainframe computers, it is understandable that structured data files dominated the holdings. However, several archives reported that they were beginning to see the emergence of PC-based types of electronic records (e.g. word processing documents and small databases).

Based on the survey returns, the subject areas covered by electronic records generally included:

- social and human statistical data (e.g. census, public opinion polls, biographical data on famous personalities);
- government/administrative activities (e.g. accounting, planning and business transactions, staff payroll, drainage and sewer system design, licensing, land titles & deeds);
- scientific surveys and experiments (e.g. mineral exploration)
- finance & economic analysis;
- meteorology & weather forecast.

3.7 Access & Restrictions

Most archives that were surveyed stated that they had imposed certain access restrictions on their electronic records holdings, based on data protection laws, freedom of information acts, privacy acts, archives and records acts, and other legal instruments. It is not uncommon that access to certain records may not be permitted for as long as 30 years or even 100 years (eg for the population census).

Finding aids to these holdings may range from a simple inventory list (printout or on screen) to an on-line computer programme/search engine. With respect to physical access to records, very few archives have the capability of allowing users to have direct access to the information. Only Australia, Canada, Denmark, Finland, Germany, Norway and Switzerland reported that they are able to make duplicate copies (on magnetic tapes/diskettes) for researchers. Most charge a fee for usage (time-based access fee plus cost of media). At the

time of the survey, the USA is probably the most advanced in data access as certain value-added versions of electronic records such as those related to the Vietnam War can be accessed on-line via the Internet. For details, please refer to Table F.

Chapter 4

Conclusions

Although the number of answers is relatively scarce, they are very enlightening. They show a general trend to standardization which have urged the Committee to work out recommendations in these areas.

It is worth noting that most respondents indicated that they would like to be kept informed about the lessons to be drawn from the survey. For instance, one of the survey findings was that archivists lacked the training required to provide them with the necessary skills to deal with emerging information technologies.

It is also evident from the findings that archives have generally not modified their established ways of dealing with researchers. The shift to electronic media puts increasing pressure on archivists to provide fast and user-friendly reference service to their holdings. They must transform the delivery of reference services in spite of access conditions such as privacy, security, copyright, and costs.

In order to gain a greater understanding of these issues and the trends taking place in the establishment of electronic records programs, the Committee agreed that another survey should be conducted within a few years.

Annex 1 Survey Questionnaire

Survey on International Electronic Records Programmes in Archival Institutions (ICA Category A Members)

I Institution Profile

1. Name of Institution:
2. Address:
- 2a. Postal Code:
3. Telephone Number
4. Telefax Number:
- 4a. Telex Number:
5. Contact Person(s):
6. Official Operating Hours:-
Monday-Friday:
Saturdays:
Sundays & Public Holidays:
7. Brief Background on the Institution
(e.g. its establishment, roles and functions, organizational structure etc.)
8. Is there a division(s)/unit(s) responsible for Electronic Records Programme?
Not applicable

[Note: You may want to stop here if your institution currently *does not* keep electronic records and *has no intention to acquire and preserve these records in the next five years*.

However, we would appreciate it if you could tell us what steps have your institution taken to help position the Archives to deal with electronic records. We are also keen to know your views on the preservation of electronic records.

Please return these two pages to us after you have completed it. We thank you for your co-operation.

If yes, please name the division/unit, describe its roles and responsibilities:

(Please use the back of this page if the space is insufficient)

II Electronic Records Programme Profile

[Note: If your institution currently keeps electronic records *or* intend to acquire and preserve electronic records soon, (ie within the next three years), please answer those relevant questions (attach a separate page if the allotted space is insufficient) and return the entire set of survey form to us. Thank you for your co-operation.]

8. Background on the Electronic Records Programme

8a When/how it was established (or when will the programme be expected to start)?

8b Please describe the laws and/or policies that [would] provide the legal and administration framework for the programme.

8c Please describe the number of staff that support the programme and their training or qualifications. Please also include an organization chart.

8d Please describe your corporate policies on the appraisal, acquisition, preservation and dissemination/use of

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electronic records.

8e Are [Would] there binding regulations/guidelines/procedures issued to departments for the retention/disposition and transfer of electronic records to the archives for preservation? Please attach copies of these documents.

8f What preservation format and media are currently in-use *and* are you expected to migrate to a new format and media in the near future? (Please describe format and media)

8g Please describe the technical and procedural standards and practices that you employ to manage the acquisition, processing, preservation and dissemination of electronic records that are of archival value. (Please forward any supporting documentation)

8h Please give a breakdown of the hardware/software [to be] used for processing and preserving electronic records.

8j What are [would be] your storage conditions?

III Electronic Records Holdings Profile

9. Please describe the size of your electronic records collection according to the following categories. (Please indicate the unit of measurement)

- _____ data files (eg datasets)
- _____ textual records (eg word processing, E-mail)
- _____ technologically complex datasets (eg GIS, multi-media)

10. From what types of organization have these records been obtained?

11. Please list the major subject areas covered by these records:

12. How soon can researchers gain access to your electronic records holdings?

13. Please describe the nature and types of finding aids available for researchers.

14. How are electronic records being made available (eg format, media) to researchers?

15. Please describe your policy on charging for reference services and if fees are imposed, please identify them. (please state fees in US\$)

16. Please describe any restrictions that may be imposed on the disclosure of information contained in the electronic records (eg privacy, security, legislations etc). Are copyright laws a considering factor, and if so, in what ways do they impact on the dissemination of electronic records?

17. Any other comments/suggestions?

(This survey will help the ICA Electronic Records Committee in drafting its guide on managing/preserving electronic records. Your comments and suggestions are therefore important and very much appreciated.)

Table A List of Responses

SURVEY ON INTERNATIONAL ELECTRONIC RECORDS PROGRAMS

This list includes all the archival institutions the questionnaire was sent to. A tick (x) in the (*Answer*) column shows that an answer has been given. A tick (x) in the (*Answer: No*) column shows that the answer was simply negative without comment. When the answer was (*Yes*), details are shown in the five following tables. (B-F)

Total of answers received: answers 100/189; negative answers (No): 65; positive answers (Yes): 35.

A1	Country	State	Institution	Answer	Answer: No	Answer: Yes
1	Albania/Albanie		Direction générale des Archives d'État			
2	Algeria/Algérie		Direction générale des Archives nationales			
3	Andorra/Andorre		Arxius Nacionals			
4	Angola		Arquivo Historico Nacional			
5	Antigua and Barbuda		National Archives			
6	Argentina/Argentine		Archivo General de la Nacion			
7	Aruba		Département des archives centrales			
8	Aruba		Historical Archives Section	X	X Aware of pending problem but too recent to deal with this	
9	Australia/Australie		Australian Archives	X		X
10	Australia/Australie	New South Wales / Nouvelles Galles du Sud	Archives Authority of New South Wales	X		X
11	Australia/Australie	Victoria	Public Record Office of Victoria	X		X
12	Australia/Australie	Western Australia/ Australie occidentale	State Archives of Western Australia	X		X
A2	Country	State	Institution	Answer	Answer: No	Answer: Yes

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13	Austria/Autriche		Österreichisches Staatsarchiv General-direktion	X	X	
14	Bahamas		Department of Archives	X	X	
15	Bangladesh		National Archives	X	X	
16	Barbados/Barbade		Department of Archives	X	X Unforeseen matter Preservation is the responsibility of creating agencies	
17	Belarus/Biélorussie		Committee on Archives and records Management under the Council of Ministers	X	X Ways and means are being settled for E.R. management	
18	Belgium/Belgique		Archives générales du Royaume			
19	Belize/Bélize		Belize Archives Department	X	X Aware of pending problem	
20	Benin/Bénin		Direction des Archives nationales	X	X Computerization in this country still very scarce	
21	Bermuda/Bermudes		Bermuda Archives	X	X Long-range program to be drawn up in 1996	
22	Bosnia-Herzegovina/ Bosnie-Herzégovine		State Archives	Non delivered		
23	Botswana		Botswana National Archives and Records Services	X	X Lack of means	
24	Brazil/Brésil		Arquivo nacional			
25	Brazil/Brésil	Sao Paulo	Divisao de Arquivo do Estado de Sao Paulo			

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A3	Country	State	Institution	Answer	Answer: No	Answer: Yes
26	Brunei		Brunei Museum and Archives	X	X	
27	Bulgaria/Bulgarie		Direction générale des Archives près le Conseil des Ministres			
28	Burundi		Archives nationales du Burundi			
29	Cameroon/Cameroun		Direction des Archives nationales			
30	Canada		Archives nationales du Canada	X		X
31	Canada	Alberta	Provincial Archives of Alberta	X	X	
32	Canada	Ontario	Archives of Ontario	X	X No custody because of lack of means but records are managed within the creating agencies	
33	Canada	Québec	Archives nationales du Québec	X		X
34	Cape Verde/Cap-Vert		Arquivo Historico Nacional	X	X	
35	Cayman Islands/Iles Caïman		National Archives	X		X
36	Chile/Chili		Archivo Nacional de Chile			
37	China/Chine		State Archives Bureau of China			
38	Colombia/Colombie		Archivo General de la Nacion	X		X
39	Comoros/Comores		Archives nationales - Centre national de documentation et de recherche scientifique			
40	Cook Islands/Iles Cook		National Archives			

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A4	Country	State	Institution	Answer	Answer: No	Answer: Yes
41	Costa Rica		Archivo Nacional	X	X Aware of pending problem No transfer to be considered before 15 years	
42	Côte d'Ivoire		Direction des Archives nationales			
43	Croatia/Croatie		Arhiv Hrvatske	X	X Aware of pending problem	
44	Cuba		Archivo Nacional	X	X	
45	Cyprus/Chypre		State Archives	X	X Does not currently keep electronic records, but looks forward to hear of the results of the survey and the ICA guide on the management of electronic records.	
46	Czech Republic/ République tchèque		Archivni Sprava Ceske Republiky	X	X Beyond scope of Archives	
47	Denmark/Danemark		Rigsarkivet	X		X
48	Djibouti		Institut supérieur d'études et de recherches scientifiques et techniques			
49	Dominica/Dominique		Public Library of Dominica	X	X	
50	Dominican Republic/ Républiquen dominicaine	Santo Domingo	Archivo General de la Nacion			
51	Ecuador/Equateur		Archives nationales	X	X Documentary information retrieval	

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A5	Country	State	Institution	Answer	Answer: No	Answer: Yes
52	Egypt/Égypte		National Archives			
53	Ethiopia/Éthiopie		National Library and Archives	X	X	
54	Fiji Islands/Fidji		National Archives of Fiji			
55	Finland/Finlande		National Archives of Finland	X		X
56	France		Direction des Archives de France	X		X
57	Gabon		Direction générale des archives nationales			
58	Gambia		National Archives			
59	Germany/Allemagne		Bundesarchiv	X		X
60	Germany/Allemagne	Baden-Württemberg/ Baden-Wurtemberg	Landesarchivdirektion	X	X Unforeseen matter Beyond scope	
61	Germany/Allemagne	Bayern/ Bavière	Generaldirektion der Staatlichen Archive	X	X Unforeseen matter Beyond scope	
62	Germany/Allemagne	Berlin	Archivverwaltung des Landes			
63	Germany/Allemagne	Brandenburg / Brandebourg	Landesarchivverwaltung			
64	Germany/Allemagne	Bremen/ Brême	Landesarchivverwaltung der freien Hansestadt Bremen und Staatsarchiv	X		X
65	Germany/Allemagne	Hamburg/ Hambourg	Staatsarchiv			
66	Germany/Allemagne	Hessen/Hess e	Archivverwaltung des Landes	X		X
A6	Country	State	Institution	Answer	Answer: No	Answer: Yes

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67	Germany/Allemagne	Mecklenburg-Vorpommern/ Mecklembourg-Poméranie Antérieure	Landesarchivverwaltung	X	X	
68	Germany/Allemagne	Niedersachsen/ Basse-Saxe	Archivverwaltung des Landes	X		X
69	Germany/Allemagne	Nordrhein-Westfalen/ Rhénanie-du-Nord-Westphalie	Archivverwaltung des Landes	X	X Special unit assumes appraisal	
70	Germany/Allemagne	Rheinland-Pfalz/ Rhénanie-Palatinat	Archivverwaltung des Landes	X	X	
71	Germany/Allemagne	Saarland/ Sarre	Archivverwaltung des Saarlandes	X	X	
72	Germany/Allemagne	Sachsen-Anhalt/ Saxe-Anhalt (Magdebourg)	Landesarchivverwaltung	X	X	
73	Germany/Allemagne	Sachsen/Saxe	Archivverwaltung des Freistaates	X	X Aware of pending problem	
74	Germany/Allemagne	Schleswig-Holstein	Archivverwaltung des Landes	X	X	
A7	Country	State	Institution	Answer	Answer: No	Answer: Yes
75	Germany/Allemagne	Thüringen/	Landesarchivverwaltung			

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		Thuringe				
76	Ghana		National Archives of Ghana			
77	Greece/Grèce		Archives générales d Etat	X	X	
78	Guam		Public Library			
79	Guinea/Guinée		Archives nationales			
80	Guinea-Bissau/ Guinée-Bissau		Institut national d'études et de recherches			
81	Guyana		National Archives of Guyana			
82	Haïti		Archives nationales			
83	Hong Kong		Public Records Office	X	X Does not keep electronic records.	
84	Hungary/Hongrie		Hungarian National Archives	X	X	
85	Iceland/Islande		National Archives			
86	India/Inde		National Archives of India	X	X	
87	India/Inde	Karnataka	Karnataka State Archives	X	X No program foreseen but takes interest in E.R. field	
88	India/Inde	Kerala	Kerala State Archives	X	X	
89	India/Inde	West Bengal	State Archives of West Bengal	X	X	
90	Indonesia/Indonésie		Arsip National Indonesia	X		X
91	Iran		Iran National Archives Organisation	X		X
92	Ireland/Irlande		National Archives of Ireland	X		X
A8	Country	State	Institution	Answer	Answer: No	Answer: Yes
93	Israel/Israël		Israel State Archives			

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94	Italy/Italie		Ufficio Centrale Beni Archivistici	X	X	
95	Jamaica/Jamaïque		Jamaica Archives and Records Department			
96	Japan/Japon		National Archives	X	X	
97	Kazakstan		General Directorate of Records and Archives of the Cabinet of Ministers of the Republic of Kazakstan			
98	Kenya		Kenya National Archives	X	X Although there is no special unit set up to handle electronic records, the Archives realize the importance of electronic records as they form part of public records. The KNADS has initiated preliminary steps to bring attention of senior public officials to the need to preserve electronic records and they expect the establishment of an Electronic Archives Unit in the near future. The only barrier is lack of electronic records experts.	
99	Kiribati		Kiribati National Archives			
A9	Country	State	Institution	Answer	Answer: No	Answer: Yes
100	Korea (PDR of)/ Corée (RPD de)		State Bureau of Archives			
101	Korea (R of)/Corée (R		Government Archives and Records	X	X	

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	de)		Service			
102	Kuwait/Koweït		Document and Archives Center	X	X Project has not been specified	
103	Latvia/Lettonie		Latvijas Valst Arhivu Generaldirekcija	X	X Project has not been specified	
104	Lebanon/Liban		Centre des Archives nationales			
105	Lesotho		National Archives	X	X	
106	Liberia/Libéria		Center for National Documents and Records			
107	Liechtenstein		Liechtensteinisches Landesarchiv	X	X	
108	Lithuania/Lithuanie		Lithuanian Audio-Visual Archives	X	X No electronic records preserved. Only audio-tapes and video-tapes are preserved	
109	Luxembourg		Archives nationales			
110	Macao/Macau		Arquivo Historico de Macao	X	X	
111	Former Yugoslav Republic of Macedonia/ Ancienne république de Macédoine		Arhiv na Macedonia	X	X	
112	Malawi		National Archives of Malawi	X		X
113	Malaysia/Malaysie		National Archives of Malaysia	X		X

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A10	Country	State	Institution	Answer	Answer: No	Answer: Yes
114	Malta/Malte		National Library of Malta			
115	Marshall Islands/Îles Marshall		Alele Archives Museum, Library National Archives			
116	Mauritius/Île Maurice		Archives Department	X	X The Archives have not yet been computerized. The only electronic archives preserved are microfilms and microfiches. There is neither an electronic records program nor any legal and administrative framework to support it. The Archives only have jurisdiction over public records after 60 years.	
117	Mexico/Mexique		Archivo General de la Nacion	X	X	
118	Mexico/Mexique	Chiapas	Archivo General de Chiapas			
119	Mongolia/Mongolie		State Archives Administration			
120	Mozambique		Arquivo Historico de Moçambique			

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A11	Country	State	Institution	Answer	Answer: No	Answer: Yes
121	Myanmar		National Archives Department	X	X No program, but the National Records and Archives Law, 1990, includes sound and image recorded by mechanical or electrical or any other process, the Archives intend to acquire and preserve these records in due course.	
122	Namibia/Namibie		Namibian Archives			
123	Nepal/Népal		National Archives		Do not keep electronic records but plan to acquire and preserve this type of records in next five years	
124	Netherlands/Pays-Bas		Algemeen Rijksarchief	X		X
125	Netherlands Antilles/ Antilles néerlandaises		Centraal Historisch Archief	X	X Aware of pending problem but Lack of means	
126	New Zealand/ Nouvelle Zélande		National Archives	X		X
127	Nicaragua		Archivo Nacional de Nicaragua			
128	Niger		Direction des Archives nationales			
129	Nigeria/Nigéria		National Archives Department			
130	Norway/Norvège		Riksarchivet	X		X

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A12	Country	State	Institution	Answer	Answer: No	Answer: Yes
131	Oman		Ministry of National Heritage and Culture			
132	Pakistan		National Archives	X	X Not applicable at this moment, important archives holdings are microfilmed. Most agencies have not been converted to electronic media and do not produce or transfer electronics records to NA for preservation.	
133	Panama		Archivo Nacional			
134	Papua New Guinea/ Papouasie Nouvelle-Guinée		National Archives and Public Records Services			
135	Paraguay		Archivo Nacional	X	X	
136	Peru/Pérou		Archivo General de la Nacion	X	X	
137	Philippines		Records Management and Archives Office	X	X	
138	Poland/Pologne		Naczelna Dyrekcja Archiwow Panstwowych			
139	Portugal		Arquivos Nacionais			
140	Puerto Rico/Porto Rico		Archivo General de Puerto Rico			
141	Romania/Roumanie		Direction des Archives d'Etat	X		X

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A13	Country	State	Institution	Answer	Answer: No	Answer: Yes
142	Russian federation/ Fédération de Russie		State Archival Service of Russia			
143	Rwanda		Service des Archives Nationales	X	X	
144	San Marino/Saint- Marin		Archivio pubblico dello Stato			
145	Saudi Arabia/Arabie saoudite		Central Archives			
146	Senegal/Sénégal		Archives du Sénégal			
147	Seychelles		Seychelles Nationales Archives and Museums			
148	Singapore/Singapour		National Archives	X		X
149	Slovak Republic/ République slovaque		Ministerstvo Vnutra Slovenskej Republiky	X	X	
150	Slovenia/Slovénie		Arhiv Republike Slovenije	X	X Project has not been specified	
151	Solomon Islands/Îles Salomon		National Archives			
152	South Africa/Afrique du sud		State Archives Service	X		X
153	Spain/Espagne		Direccion de los Archivos Estatales			
154	Spain/Espagne	Andalucia/ Andalousie	Archivo General de Andalucia			
155	Spain/Espagne	Catalunya/ Catalogne	Arxiu Nacional de Catalunya			
156	Spain/Espagne	Euskadi	Centro de Patrimonio documental de Euskadi			
A14	Country	State	Institution	Answer	Answer: No	Answer: Yes

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157	Sri Lanka		National Archives	X		X
158	St Vincent and Grenadines/ Saint-Vincent et Grenadines		National Archives			
159	Surinam		Landsarchiefdienst			
160	Swaziland		Swaziland National Archives			
161	Sweden/Suède		Riksarchivet			
162	Switzerland/Suisse		Archives fédérales suisses	X		X
163	Tanzania/Tanzanie		National Archives			
164	Thailand/Thaïlande		National Archives of Thaïlande	X	X No formal unit or staff responsible for direct support of an electronic records program. In 1992 though LANs FoXPro was implemented to retrieve data for records centre.	
165	Togo		Archives nationales			
166	Trinidad and Tobago/ Trinité et Tobago		National Archives			
167	Tunisia/Tunisie		Archives nationales tunisiennes			
168	Turkey/Turquie		Devlet Arsivleri Genel Müdürlüğü			
169	Tuvalu		Ministry of Foreign Office and Economic planning			
170	Ukraine		Direction des Archives d'Ukraine			
A15	Country	State	Institution	Answer	Answer: No	Answer: Yes

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171	United Arabs Emirates/ Émirats arabes unis		National Archives	X	X	
172	United Kingdom/ Royaume Uni	England/ Angleterre	Public Record Office	X		X
173	United Kingdom/ Royaume Uni	England/ Angleterre	British Library Oriental and India Office Collections			
174	United Kingdom/ Royaume Uni	Northern Ireland/ Irlande du Nord	Public Record Office	X		X
175	United Kingdom/ Royaume Uni	Scotland/ Ecosse	Scottish Record Office	X		X
176	United States/États-Uni		National Archives and Records Administration	X		X
177	United States/États- Unis	Kentucky	Kentucky Department for Libraries and Archives			
178	United States/États- Unis	Maine	Maine State Archives			
179	Vanuatu		Vanuatu National Archives			
180	Vatican/Saint-Siège		Archives secrètes vaticanes	X	X	
181	Vietnam		State Archives Department			
182	Yemen/Yémen		National Centre for Archives			
183	Yugoslavia (Serbia / Serbie)		Arhiv Jugoslavije			
184	Zaïre		Archives nationales du Zaïre			
185	Zambia/Zambie		National Archives			
A16	Country	State	Institution	Answer	Answer: No	Answer: Yes
186	Zanzibar		Zanzibar National Archives			

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187	Zimbabwe		National Archives	X		X
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Table B Legal and Administrative Framework

ANALYSIS OF THE SURVEY ON INTERNATIONAL ELECTRONIC RECORDS PROGRAMS

Analysis of the answers to the questionnaires sent to archival institutions in charge of machine readable records. The precise name of each institution appears in the aggregate report. *NA = Not Applicable*

B1	COUNTRY	ARCHIVAL INSTITUTION			ELECTRONIC RECORDS			
		Date of Foundation	Parent Institution	National Archives Act/Date	Specific Law/Date	Specific Unit	Date of Foundation	Role and Responsibilities

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9	AUSTRALIA (ACT)	1940s		1974	Primarily covered by the Archives Act of 1983.	Yes, a program entitled Document-ation Standards	1994	The DS Program was established to develop and coordinate electronic records policies but functional responsibility for records activities rests upon a number of Programs: Records Evaluation and Disposal; Records Control and Description; Custody and Preservation; and Access and Information Services. The Archives has officially adopted a distributed custodial role in electronic records management.
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10	AUSTRALIA (New South Wales)	1960		Archives Act, 1960	The Archives Act of 1960 will be replaced in 1995/96 by new State records legislation where electronic records will be included.	No.	NA	A distributed custodial arrangement with government agencies is envisaged, NSW Archives Authority will issue standards and codes of best practice governing the capturing, retention, maintenance and accessibility of electronic records and will provide support to agencies through training and practical assistance.
11	AUSTRALIA (Victoria)	1973		1973	No, but under General Standard on Disposal of Public Records, electronic records are included	No.	NA	The PRO of Victoria in general is responsible for assisting State Government of Victoria and municipal agencies including courts, statutory authorities, hospitals and educational

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12	AUSTRALIA (Western Australia)	1945		Library Board of Western Australia Act, 1951-1983		No	NA	The PRO of Western Australia in general is responsible for assisting agencies in RM & archival matters including electronic records.
30	CANADA	1872	Heritage	1987	1973	Yes, in each Branch	2e+07	enforcement of the law methodology standardizing providing advice follow-up training reference services
33	Canada QUEBEC	1886	Cultural Affairs Council of Treasury	1983	1983 Instructions of Council of Treasury	Yes, in several agencies	1991	enforcement of the law methodology standardizing providing advice reference services
35	CAYMAN ISLANDS	1989/1991	The Cayman Islands Govern- ment	Institute for Caymanian heritage Law, 1991	The 1991 Law makes provision for records management including management of electronic records.	No, but through informal links with the Computer Services Department as it is represent- ed in the Disasters and Records Committee in which Director of the Archives		Provide preservation, storage and retrieval facilities.

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						chairs.		
37	CHINA	1959	General Office of CPC	Archives Law, 1987	No	Computer Office under the Technical Department of the Central Archives.	1985	develop description standards preparing description and indexing establish machine-readable catalog databases manage computer system edit archival application software
38	COLOMBIA	?	Home Office	?	?	Yes	1993	linking between various media custody preservation juridical valuation transfer into data bases access
47	DENMARK	1889	Culture	1992	1976	yes	1973	accession advice scheduling appraisal custody preservation
55	FINLAND	1816	Education	1994	Being drafted	Yes	1995	training methodology standardizing providing advice scheduling appraisal custody preservation finding aids technical updating
56	FRANCE	1789	Culture	1979	No	Yes	1983	methodology standardizing

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								providing advice scheduling appraisal transfer protocols custody preservation documentation finding aids technical updating training
59	GERMANY	1952	Home office	1988/1993	1992: Article 2, 5 and 8	Yes	1991	providing advice scheduling appraisal transfer protocols custody preservation control of nominal data access cost evaluation statistics dialogue with other federal agencies
64	Germany BREMEN	1221	Senate	1991	1991	yes	1991	dialogue
66	Germany HESSEN	?	Home office	1989	1986	Yes	?	custody methodology advice technological lookout and updating applications development and control office data processing
68	Germany LOW SAXONY	?	Chan- cellery	1993	1993 order 1976 instructions 1995	Yes	1976?	methodology providing advice appraisal archival processing
90	INDONESIA	1971	?	1971	Presidential	Yes, under	1994	conservation

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					Decree No 92 of 1993	Department of Research & Development of New Media System		utilization
91	IRAN	1970	Foreign Affairs Culture Justice	?	No	Yes	1992	preservation
92	IRELAND	1702/1867	Arts Culture and the Gaeltacht Prime Minister	1986	Yes	Constituting team		survey inducement methodology advice
112	MALAWI	1947	Ministry of Youth, Sports & Culture	1975	No, but uses the Archives Act to apply to electronic records.	No, but the Conservation and Repro-graphic Unit also handles electronic records.		acquisition and safe custody and service of electronic records.
113	MALAYSIA	1957	Ministry of Culture, Arts and Tourism.	National Archives Act, No. 44, 1966	No, a new National Archives Act is being drafted to include "machine-readable records".	Yes, first under the Records Management Service Division, 1985, subsequently transferred to Management of Government Records Division in 1988 and since 1993, under the Identifica-	1985	identification and acquisition; provide advisory services; safe custody of electronics records. Information Sources Branch.

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						tion of Information Sources Branch		
124	NETHERLANDS	?	Home Office?	1995	1995 and various instructions.	Constituting team	1996	dialogue technical updating control appraisal advice
126	NEW-ZEALAND	1957	Departme nt of Internal Affairs	1957	No, but the Archives Act of 1957 states that all public archives irrespective of format which in the opinion of the Chief Archivist warrant permanent preservation shall be deposited with National Archives.	An Electronic Records Working Party was formed in 1991 to look at issues related to electronic records. Electronic records policies are subsequently developed by the Appraisal and Description Policy Section and the Regional Archivist, Christchurch and approved by the Electronic Records Committee.	1995	encourage and educate users of electronic information; provide guidance and authorization to distinguish between electronic information having transitory value and those with long term value; acquire custodial control of and provide access to electronic archives (not necessarily in electronic form)
130	NORWAY	1817	Culture	1992	No	Yes	1984	methodology appraisal preservation

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								standardizing technical updating advice computer center
141	ROMANIA	1831	Home Office	1925 (Revision on hand)	1990	Yes	1976	custody access development of applications follow-up
146	SÉNÉGAL	1913	Secrétaire général du Gouver- nement Primature	1981	Décret no. 81-H30 du 15 avril 1981. Fixer l'organisation et les fonctionne- ment des Archives du Sénégal Décret no. 83- 3H1 du 1er avril 1983 relatif du délai de communicatio n des documents d'archives	Nous avons un service d'informati- que	1990	
148	SINGAPORE	1967	National Heritage Board, Ministry of Informatio n & the Arts	National Archives Act of 1967 and National Heritage Board Act of 1993.	Definition of "Public Records" in NHB Act includes electronic records.	Being established. Currently under Technical Services Division.	1995	to discharge full archival functions: appraisal, acquisition, accessioning, preservation to dissemination, including setting guidelines and preservation standards and format.

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152	SOUTH AFRICA	1922	Department of Arts, Culture, Science and Technology	Archives Act No. 6 of 1962. New legislation to be tabled in 1996	Definition of "archives in Archives Act includes electronic records, thus make them subject to all RM requirements	Not a separate unit, but an internal Committee on Machine-readable Archives (COMA). Administrative framework being formulated.	The COMA was formed in 1993, first substantive transfer of electronic records expected in 1995.	records appraisal & scheduling policy etc. are being formulated.
157	SRI LANKA	?	?	?	Not yet prepared	No, but a computer division was set up in 1988 to prepare finding aids for selected holdings.	-	-
162	SWITZERLAND	1848	Home office	1966	Instructions 1984, 1990	Multivalent archivists	1984	advice appraisal preservation access technical updating
172	United Kingdom ENGLAND	1838	Chancellery	1958 and 1967	1958 et 1967	Yes	1995	to be decided
174	United Kingdom NORTHERN IRELAND	1923	?	1923	No	In the making	NA	guidelines appraisal preservation standardization technological lookout advice
175	United Kingdom SCOTLAND	1937	?	1937 very "permissive" law	No	Yes	1990	methodology standardizing inducement advice

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176	U.S.A.	1935	independent	Yes	Yes, revision on hand, with new regulations principally addressing e-mail	Yes		
187	ZIMBABWE	1935	?	National Archives Act, 1986	No, but the National Archives Act describes a "record" as "any medium in or on which information is recorded", therefore include electronic records.	No, but there is an Automation Unit within the Archives which has terminals linked to Central Computing Service (bureau) for Records Center data processing.		

Table C Profiles of Electronic Records Programs

ANALYSIS OF THE SURVEY ON INTERNATIONAL ELECTRONIC RECORDS PROGRAMS

Analysis of the answers to the questionnaires sent to archival institutions in charge of machine readable records. The precise name of each institution appears in the aggregate report. *NA = Not Applicable*

C1	COUNTRY	STAFF		REGULATIONS/POLICIES
		Archivists	Computer Staff	
9	AUSTRALIA (ACT)	1 (teritary & archival qualification)	1 (teritary & IT qualification)	<p>In March 1995, the Australian Archives (AA) issued a policy document on electronic records entitled <i>"Managing Electronic Records: A Shared Responsibility"</i> which clearly spells out AA's role (as well as agency's role) in managing electronic records. A "distributed custody" approach is adopted. The AA will work with agencies to ensure that their electronic records (and systems) are manageable, e.g. help to identify appropriate maintenance procedures and determine record retention schedules.</p> <p>Under the following two circumstances, AA will however, accept physical custody of electronic records of enduring value:</p> <ol style="list-style-type: none"> 1) when an agency is about or has become defunct and no agency is identified as its successor to the function. 2) when AA enters into an agreement with an agency to take custody of the records. <p>Transfer procedures, standards etc. are being drafted.</p>
10	AUSTRALIA (NEW SOUTH	35 (teritary and archival qualification) for records of all	NA	Adopting a "steering" role and follow closely the AA approach to electronic records management.

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	WALES)	format		
11	AUSTRALIA (VICTORIA)	NA	NA	
11	AUSTRALIA (VICTORIA)			Archives' responsibility is not confined to keeping electronic records but also establishing appraisal, preservation and disposal policies, procedures and standards (in preparation). Two policy documents drafted are: <i>"VGEMS (Victorian Government Electronic Mail System) Recordkeeping: Policy Issues (May 1995)"</i> and <i>"VGEMS (Victorian Government Electronic Mail System) Recordkeeping: Implementation Issues (May 1995)"</i> . Preservation of hardcopy reports in paper or microfilm as an alternative to preservation of data.
12	AUSTRALIA (WESTERN AUSTRALIA)	The PRO has a total of 16.5 staff with various qualifications in library science, IT RM and archives administration etc., but not all handle electronic records	All are involved	<i>PRO Policy No 6: The Management of Electronic Records</i> spells out PRO's role in appraising and preserving electronic records of permanent value.
30	CANADA	generalists	Yes	Enforcement of the Archives Act Records management by producing agencies (except private records and special cases) Security copy Access copy
33	Canada QUEBEC	1	2	To be decided
35	CAYMAN ISLANDS	NA but all three archivists are/will be aware of the	NA	None yet.

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		importance of electronic records.		
	CHINA	6	5	In 1983, "Tape Format for Document Information Exchange" (GB 2901-82), which is compatible with ISO 2901, was promulgated. In 1985, "Standard of Archival Description" (GB 3792.5-85) was promulgated.
38	COLOMBIA	?	?	ISO 2709 standard
47	DENMARK	2	1 archivist with special training in computer science	<div>Transfer compulsory</div> <div>Investigation within 4 months</div> <div>Flat master file</div> <div>Requisite and adequate documentation</div> <div>Coherence tests</div> <div>Security copy</div> <div>Access copy</div> <div>Description of files</div> <div>Description of data</div> <div>Links with holdings</div>
55	FINLAND	3	2	<div>Enforcement of the Records Act</div> <div>Standardized copy</div> <div>Description of files</div> <div>Description of data</div>
56	FRANCE	4	3	<div>Enforcement of the Archives Act</div> <div>Standardized copy</div> <div>Requisite and adequate documentation</div> <div>Coherence tests</div> <div>Description of files</div> <div>Description of data</div> <div>Finding aids : drawing up</div>
59	GERMANY	2	1	<div>Transfer compulsory</div> <div>Investigation within 4 months</div> <div>Flat master file</div> <div>Requisite and adequate documentation</div> <div>Coherence tests</div> <div>Security copy</div> <div>Access copy</div> <div>Description of files</div> <div>Description of data</div> <div>Links with holdings</div>

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64	Germany BREMEN	generalists	State computer center	To be decided	
66	Germany HESSEN	1	State computer center	To be decided Enforcement of the Archives Act	
68	Germany LOW SAXONY	1	State computer center	Transfer compulsory Investigation within 4 months Flat master file	Requisite and adequate documentation Security copy Access copy
90	INDONESIA	Supported by a few records managers and archivists but none has received train-ing in electronic records.	?	Survey on archival new media system Data processing Develop archival new media system	
91	IRAN	1 with special training in computer science	4	NA	
92	IRELAND	13 generalists	0	Enforcement of the Archives Act Enforcement of the data protection Act	
112	MALAWI	2 (diplomas in archives studies)	nil	No corporate policies on appraisal, acquisition, preservation and dissemination. When it come to isage of electronic records, use professional expertise and experiences. Disposition and transfer of electronic records to the Archives is by persuasion and mutual understanding.	
113	MALAYSIA	1 archivist and 1 assistant archivist. None has received training in electronic records.	?	Survey on electronic records in government agencies carried out.	
124	NETHERLANDS	6	?	To be decided Enforcement of the Archives Act	

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126	NEW-ZEALAND	2 managers and 3 archivists on part time basis	NA	<p>Same appraisal criteria for paper records also applies to electronic records, i.e. selection based on evidential and information value.</p> <p>Enforcement of the Archives Act.</p> <p>Acquisition, preservation and dissemination policies are currently under review. Consultant has reported on transfer standards for electronic records.</p> <p>Recommendations are under consideration and methods for implementation are currently being investigated. Drafted Guidelines for managing electronic records including disposal criteria, have been created and distributed to client agencies.</p>
130	NORWAY	2 or 3	1	<p>Enforcement of general archival rules, except that MRD must be transferred as soon as out of Administration value</p> <p>Requisite and adequate documentation</p> <p>Readability and coherence tests</p>
141	ROMANIA	15	?	Enforcement of the Archives Act
146	SÉNÉGAL	Directeur diplômé. École des chartres (France). Doctorat Histoire	Un Archiviste formé en informa-tique est respon-sable du Service informatique	Information not available
148	SINGAPORE	2	2 (on shared basis, and most likely buying service from national computer board)	<p>Enforcement of the National Heritage Board Act</p> <p>Policies and procedures being drafted</p>
152	SOUTH AFRICA	All members of COMA are professional archivists with varying degrees	NA	A decision was made in 1993 to accept electronic records for preservation. Policies still being developed. Meanwhile, issue of disposal authority is in the form of a schedule and appraisal is carried out

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		of exposure to computer processing and/or records management		based on these schedules.	
157	SRI LANKA	5 archives and support staff currently undergone training in Lotus 123, dBase III plus+, WP5.1 and MSDOS	NA	None yet.	
162	SWITZERLAND	generalists and specialists trained in information management	state computer center	Enforcement of the Archives Act Compulsory schedules Flat master file Requisite and adequate documentation Readability and coherence tests	Security copy Access copy Description of files Description of data Links with holdings
172	United Kingdom ENGLAND	2	?	Enforcement of the law Specific article addressing new technologies	
174	United Kingdom NORTHERN IRELAND	constitutive stage	?	Master file Temporarily: draft versions Requisite and adequate documentation Coherence tests	Security copy Access copy Description of files Description of data Links with holdings
175	United Kingdom SCOTLAND	1 or 2 from each branch in selection and preservation division	3	Enforcement of the Records Act Description of data	
176	UNITED STATES OF AMERICA	22	8	Enforcement of the Records Act Coherence tests	Description of data Control of updated files

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				Standardized copy Description of files	Links with holdings
187	ZIMBABWE	1 (BSC in Information Science)	?	Procedures and policies not yet developed.	

Table D Electronic Records Programs : Technical Specifications

ANALYSIS OF THE SURVEY ON INTERNATIONAL ELECTRONIC RECORDS PROGRAMMES

Analysis of the answers to the questionnaires sent to archival institutions in charge of machine-readable records. The precise name of each institution appears in the aggregate report. *NA = Not Applicable*

D53	COUNTRY	TECHNICAL STANDARDS		EQUIPMENT		STORAGE
		MEDIA	FORMAT	HARDWARE	SOFTWARE	
9	AUSTRALIA	<p><i>Acceptable:</i></p> <p>8mm Exabyte (Unix) QIC 120MB, 150MB, 525MB (Unix) DAT tape (Macintosh) 3½" floppy disk (DOS or Macintosh) 5¼" floppy disk (DOS) CD-ROM (Unix, DOS or Macintosh)</p> <p><i>Acceptable but conversion cost chargeable:</i></p> <p>5 ups 9-track open reel GCR tape (1600 or 6250 bpi) IBM 3480 or 3490 cartridges 4mm DDS-2 or DDS-1 compatible tape. (Unix or unlabelled ASCII flat file format for above)</p>	<p><i>Audio:</i></p> <p>AIFF (up to 16-bit 44 KHz stereo) is preferred but Windows Wave also acceptable.</p> <p><i>Movie/ Animation:</i></p> <p>Quicktime video technology is preferred but AVI/ Video for Windows also acceptable as a conversion utility to Quicktime.</p> <p><i>Graphics:</i></p> <p>PICT, GIF, JPEG, TIFF and BMP are all acceptable. No preferred format yet.</p> <p><i>Text:</i></p> <p>Four transfer formats, SGML (multimedia), fixed, readable from MS</p>	PCs/ Macintosh/ Unix	A wide variety available.	<p>Standard: 18 C \pm 2 C and 45% \pm 5% RH.</p> <p>Special Format: 10 C \pm 2 C and 35% \pm 5% RH</p>
10	Australia NEW SOUTH WALES	Agencies will be responsible for migrating electronic records to successive	Not yet selected.	The draft policy proposal does not identify any specific	NA	The draft policy proposal envisages that agencies will

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		hardware and software environment.		products for processing and preserving electronic records, which will depend on each agency's hardware and software environment.		store electronic records according to data management standards that are suitable for all valuable corporate data.
11	Australia VICTORIA	Varies according to depositors' system requirements and stages of data deposits: Transfer to PROV: Usually 3½" 1.44MB floppies. Accessioning onto PROV host system: IBM compatible LAN. Downloading for off-line storage: Usually 3½" 1.44MB floppies but may explore use of small tape cartridges or CD-ROM as long term storage media when procedures develop further.	Varies according to depositors' system requirements and stages of data deposits: Transfer to PROV: Mostly ASCII and WordPerfect for text-based records but for data files, anything importable into Dataease. Accessioning onto PROV host system: On-line using WordPerfect and Dataease. Downloading for off-line storage: Mostly ASCII and WordPerfect for text-based records and for data files, fixed field length ASCII files.	IBM compatible LAN running Novell with server capacity of 2.46 GB HD and 16MB RAM.	Dataease 4.5 for DOS and WordPerfect 5.1 for DOS. Will be moving into a Windows environment ISYS text retrieval software (re-licensed to PROV by a data depositor for use in retrieval of text files deposited.	
12	Australia WESTERN AUSTRALIA	Magnetic tape CD-ROM	Varies according to agency practice and stages of data transfer	Currently investigating options for a new computer system.	Not decided yet.	Optimal for computer records, a -10 C stack is available. Regular refreshing of data by transfer to new tape and/ or by "playing" tapes.

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30	CANADA	9-track tape 12" optical WORK disk new formats to be decided	ASCII EBCDIC standardising in progress	9-track tape drives 3480 cartridge drives; 8 mm EXABYTE drives CD-ROM drives diskette drives 486 and Pentium computers	UNIX TAPEVIEW Magellan Knowledge seeker	Controlled temperature Controlled humidity Security copy annual rewinding
33	Canada QUEBEC	Standardising in progress	Standardising in progress	Standardising in progress	Standardisin g in progress	Various standards up to each public service
35	CAYMAN ISLANDS	On backup tapes/ disks. Whatever migration is planned by the Computer Services would probably address administrative needs, not archival ones.	?	?	?	Strong room 55 F(?) and 50-55% RH. The building is "hurricane-proof".
37	CHINA	5¼ floppy disc and CD; 125 UPS 9-track open reel tape.	ISO 2709 GB 2901-82	Hitach M-220K HP 4031-852 (PC)	OSI-EX DOS 6.0 Window 3.1	18°C ± 2°C 50% RH ± 5%
38	COLOMBIA	ISO 2709 standards	?	IBM PC	Fox Pro Clipper Micro CDS Red	Special stacks
47	DENMARK	9 track magnetic tapes new, never used media standards under revision CD-ROM under evaluation	Flat, ASCII Standardising in progress <i>(for older files various formats have been accept-ed as far as they were adequately documented)</i>	Mainframe Norsk Data 2 tape drives next : multimedia system and SCSI interface	specific programmes UNIQUE SIBAS	Normal stack Controlled temperature Controlled humidity
55	FINLAND	1/ 2" magnetic tape transfer on cassettes foreseen	Flat EBCDIC conversion into ASCII foreseen	IBM RISC 6000 DAT workstations	Unix	Special stacks Controlled temperature Controlled

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						humidity Refreshing
56	FRANCE	6250 bpi 9 tracks tape	Flat	GCOS7 tape drives	GCOS7	Special stacks Controlled temperature Controlled humidity Refreshing every 5th year
59	GERMANY	BM 9 track 1600 BPI/ 4 mm DAT	Flat ASCII EBCDIC	386DX25 PC tape and cassettes drives	Thomson CSF 2.01 system Thomson Transfer, beta version	Special stacks Special shelves Controlled temperature Controlled humidity Controlled admittance Periodical refreshing Emergency measures
64	Germany BREMEN	?	?	Computing centre	?	Special stacks Controlled admittance
66	Germany HESSEN	Standardising in progress	Standardising in progress	?	?	To be decided
68	Germany LOW SAXONY	?	Flat ASCII EBCDIC	?	?	Special stacks Special shelves Controlled temperature, humidity and admittance Periodical refreshing Emergency measures
90	INDONESIA	Magnetic tape?	?	?	?	?
91	IRAN	Not defined	Not defined	80 486 DX66	Unix Foxbase	Sun and dust protected stacks controlled temperature
92	IRELAND	To be decided	To be decided	To be decided	To be	To be decided

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					decided	
112	MALAWI	Tapes?	NA	NA	NA	20-25 C and 45-50% RH.
113	MALAYSIA	Magnetic tapes and cartridges.	NA	NA	NA	Metal Cabinets. 21 C \pm 2 C and 50% \pm 5% RH.
124	NETHERLANDS	Standards to be decided	Standards to be decided	NA	NA	Special stacks Custody preferably left to producing services
126	NEW ZEALAND	Proposed to be CD-ROM. In some instances where transfer may not be in electronic form and microfilm is the most likely format	Not yet developed	Not yet developed.	Not yet developed.	Not yet developed.
	Northern IRELAND	Guidelines underway	Guidelines underway	Various units	Various types	Results of survey in government department being considered
130	NORWAY	½" tape (transfer on CD-ROM is foreseen)	Flat ASCII EBCDIC (standards to be decided for textual records)	PC 486 tape and cassette drives CD-ROM drive	SCSIPAK 2.22 and 1.05 LESDISK	Special stacks Controlled temperature Controlled humidity Refreshing
141	ROMANIA	Tape (transfer on CD-ROM is foreseen)	?	CORAL-8730 NETWORK 386 and 486 PC	UNIMARC DBASE FOXPRO	
146	SÉNÉGAL		Un archiviste	PC/ DOS		
148	SINGAPORE	CD-R (preferred storage media) magnetic tapes DAT 3½" diskettes (popular transfer media for PC-based	Various ISO and de facto formats: ASCII flat file. Fixed format readable from MS Word and WordPerfect. SGML HDF	Currently the unit uses two 486 PCs with 1.5 GB HD, 64 MB RAM and Dual Page 120 Corner-stone Monitors. When the	Windows 3.1 & 95 MS DOS Wordperfect 5.1 MS Office	Being established in the new archives building. Currently electronic records are stored at the microfilm

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		electronic records)	(hierarchical data structure) ASCII flat file TIFF, GIF, BMP, JBIG PCD, TIFF, GIF, JPEG (lossless mode) JBIG (up to sixbits per pixel) ADPCM/ SHORTEN (Lossless mode) AIFF Windows Wave MPEG- 1 layer 3 MPEG-2 (lossless mode), Quicktime video technology, AVI Video for Windows MHEG	unit is fully functional, new equipment such as Unix servers will be added. Major auxiliary equipment include: HP Scanject II (A4) Olivetti Filenet scanner (A3) Mekel 16mm/ 35mm roll film scanner Meridiam Data Personal Scribe 1000 CD recorder	Wordscan Plus (OCR) Folio View (free-text retrieval)	repository, at 19 C ±1 C and 45%±5% RH.
152	SOUTH AFRICA	Recently migrated from open reel tape to 3490 cassettes.	Data would be kept in flat file format but aware that some data are inseparable from its supporting software.	IBM mainframe facilities (at the Computer Service Bureau).	General utility programmes such as MVS/ Data Interfile transfer, testing and operations utility. Others to be investigated.	Will aim at similar conditions as for microfilm: dust- free, temperature 17 -20 C, 35% to 45% RH. Electronic Records will be stored separately from paper records.
157	SRI LANKA	Currently using magnetic tapes but exploring possibilities of migrating data to optical disks in the near future	?	Wang VS 5E with 3 workstations 486DX PC A4 scanner & laser printer	Lotus 123 dBase III plus MS DOS Wordperfect 5.1	Electronic records stored in air- conditioned room with optimum temperature and humidity required.
162	SWITZER- LAND	6250 BPI tape (<i>transfer on CD-ROM or tape is fore- seen. Safety microfilmed</i>)	Flat File	IBM 3090-400 NCR Tower	MVS, TSO, CA-EARL UNIX	Special stacks Controlled temperature

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		<i>copies of listings are made.)</i>			Windows	Controlled humidity
172	United Kingdom ENGLAND	Standardising in progress	Standardising in progress	To be decided	To be decided	BS5454 standards of the British Standard Institute
174	United Kingdom NORTHERN IRELAND	Guidelines underway	Guidelines underway	Various units	Various types	Results of survey in government departments being considered
175	United Kingdom SCOTLAND	Tape Trend to standardisation	Trend to standardization	Various units	Various types	Special stacks Various standards up to each service
176	UNITED STATES OF AMERICA	Tape (10 years maximum) 3480 cassettes	Flat	Various 486 stations on OS/ 2 IBM RS/ 6000 RISC	Oracle	Special stacks Air-conditioning Controlled humidity
187	ZIMBABWE	Floppy disks	NA	8 Pcs	CDS ISIS 3.07 WordPerfect 5.1 Pagemaker 5.0	Room temperature and steel cabinets for storage of diskettes.

Table E Electronic Records Programs : Holdings

ANALYSIS OF THE SURVEY ON INTERNATIONAL ELECTRONIC RECORDS PROGRAMS

Analysis of the answers to the questionnaires sent to archival institutions in charge of machine readable records. The precise name of each institution appears in the aggregate report. *NA = Not Applicable*

E60	COUNTRY	TYPE OF RECORDS	SIZE	PROVENANCE	SUBJECT AREAS
9	AUSTRALIA	Data files Textual records	Possible electronic records estimated at 9,416.75 lm.	Commonwealth government agencies Commission of inquiry Geological survey organizations Scientific and industrial research organization	Copyright applications Mineral exploration Geological survey National survey & statistics Scientific survey Industrial survey Marine survey Taxation Civil aviation Tourist information Public finance Commission of inquiries (reports)
10	Australia NEW SOUTH WALES	NA	NA	NA. The proposed arrangements will cover all NSW government agencies.	NA. The distributed holdings will relate to all aspects of State government functions under Australia's constitutional arrangements.
11	Australia VICTORIA	Data files Textual records (word-processing, E-mail)	684 lm of open reel tape 103 lm of magnetic sheets/tapes 17 files (approx 12MB) 951 textual records (approx 70 MB)	Government agencies Commission of inquiry Regional development body Public utility body	Mineral exploration Water supply Drainage and sewerage Public finance Regional development Royal commissions
12	Australia WESTERN	Data files	4 sets	Commission of enquiry (Parliamentary)	Government administration, especially its involvement in

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	AUSTRALIA				commercial, business and financial dealings.
30	CANADA	Data files Textual records Complex data	2000 (<i>about 64 gigabytes</i>) Textual records (<i>about 5 megabytes</i>) complex data (<i>about 322 gigabytes</i>)	Government sources Public sources Private sources	Statistics Public opinion polls Staff management Government activities census data scientific data
33	Canada QUEBEC	Custody and preservation by producing services and administrations	?	Government departments and agencies	?
35	CAYMAN ISLANDS	Textual files	50 disks (3½")	Archives' own word-processing work	Transcripts of oral history Interviews Daily backup of computer Services' records.
37	CHINA	Data files	1100000	NA	Revolutionary/historical archives catalog Ministerial archives catalog Mao Zedong's manuscripts
38	COLOMBIA	Data files textual records complex data	60 mega-octets 300 mega-octets 20 mega-octets	Government departments and agencies Private records Scientific institutions Universities	Historical data Administrative activities Word processing field
47	DENMARK	Files	2800 files on 3000 tapes including copies	Government departments and agencies Territorial services (<i>transfer is not compulsory for territorial records</i>)	Statistics Public opinion polls Staff management Government activities Census data Scientific data Journal
55	FINLAND	Files	249 files	Government departments and agencies	Statistics Public opinion polls Census data
56	FRANCE	Files	7000 files	Government sources State administration	Statistical surveys Staff management

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					Census data
59	GERMANY	Files	7000 to 8000	Government departments and agencies Private sources	Statistics Surveys Staff management Government activities
64	Germany BREMEN	?	?	?	?
66	Germany HESSEN	Files : transfer on hand Office data processing: internal files	?	State statistics Department	Statistics
68	Germany LOW SAXONY	?	?	Government departments and agencies Private sources	?
90	INDONESIA	NA	NA	NA	NA
91	IRAN	Files	3 files	?	Government activities Famous people Revolutionary movements Tribes and nomads Economic affairs
92	IRELAND	Custody and preservation by producing administrations	Survey in hand	Government departments and agencies	Survey in hand
112	MALAWI	Data files	10 lm	High court Churches Government agencies Donations from private Individuals and UK.	Criminal cases Foreign relations Labor supply Correspondences (?)
113	MALAYSIA	Data files	100 magnetic tapes/cartridges	Prime Minister's Department	Population census Government policies
124	NETHERLANDS	NA	NA	NA	NA

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126	NEW ZEALAND	NA	NA	NA	NA
130	NORWAY	Files (<i>textual records are not accepted so far as archival records: a pilot project is starting up this fall. Until then, such records are kept on paper.</i>)	1143	Governmental bodies public administration	Government activities
141	ROMANIA	Files	2 giga-octets	Internal files	Finding aids Office data processing Management
146	SÉNÉGAL	TARA (Traitement Automatique des Répertoires d'Archives Gestion des lecteurs Table du journal officiel de la république du Sénégal	12 Kimo linéaire d'Archives	AOF (Afrique Occidentale Française) Sénégal Colonial Sénégal Moderne	
148	SINGAPORE	Data files textual records	10 sets or data and 150 sets of text files	Internal files government agencies	Transcripts of oral history Interviews Hawker licensing data Marine infringement and accident Records Political speeches Photographs
152	SOUTH AFRICA	Not yet. But probably data files and textual records	NA	The first two acquisitions will come from the Department of State Expenditure and Foreign Affairs	Staff composition of public service Foreign affairs.
157	SRI LANKA	Not yet.	NA	Internal files	Land records Book lists News clippings
162	SWITZERLAN	Files	2000 files	Government agencies	Statistics

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	D			Scientific institutions	Meteorology Business transactions Social science data Staff management Scientific data
172	United Kingdom ENGLAND	<i>(some datasets have been deposited with the ESRC data archives at Essex University)</i>	0	Government departments and agencies	Social and human data
174	United Kingdom NORTHERN IRELAND	Various types, custody by government departments	Survey in hand in government departments	Government departments Public administration Private sector	Survey in hand
175	United Kingdom SCOTLAND	Transfers foreseen	0	?	0
176	UNITED STATES OF AMERICA	Data files textual records complex datasets	20000 files 15000 files 30 files	Governmental services	Book-keeping Planning Public opinion polls Staff management Government activities Census data
187	ZIMBABWE	Data files	864 sets	Central computer service bureau Broadcasting authority Education ministry National Archives	Mostly backup of routine Functions of the broadcasting authority, exams timetables and payroll system.

Table F Electronic Records Programs : Access Provisions

ANALYSIS OF THE SURVEY ON INTERNATIONAL ELECTRONIC RECORDS PROGRAMS

Analysis of the answers to the questionnaires sent to archival institutions in charge of machine readable records.

The precise name of each institution appears in the aggregate report. *NA = Not Applicable*

F65	COUNTRY	ACCESS DELAY, GENERAL RULE	POSSIBL E RELEASE	FINDING AIDS	MEDIA	FEES	RESTRICTIONS
9	AUSTRALIA	For public researchers, when records reach 30 years of age. Records deemed to be in the public domain are available immediately. For official researchers, access is immediate if the records belong to the agency which created them. Otherwise, with the approval of the creating agency.	Yes	Two computerized finding aids: RINSE provides details of agencies and records series ANGAM II provides details of items which have been examined for release to the public. Other manual finding aids include checklists of individual items etc.	At this stage passively, i.e. on the same format/media on which the records came into the Archives' custody.	Cost recovery for the media on a case by case basis.	Commonwealth records are subject to clearance under Section 33(i) of the Archives Act 1983. Materials which falls into any of such categories as national security, defense, international relations, personal privacy, breach of confidence will be exempted from release. Business-in-confidence material is of greater concern than copyright, although the passage of 30 years would generally nullify both concerns.
10	Australia NEW SOUTH WALES	30 years. This can be varied on advice by creating agency for earlier or later release in cases of	Yes	A printed guide available on micro-film and electronic form is the principle	The draft proposal envisages that researchers will have access with	Access in the Archives Search Room is free, with charges	Currently a small proportion of records are restricted due to special confidentiality requirements. The draft

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		certain sensitive records. Records are also accessible earlier under freedom of information legislation.		finding aid. Others include manual guides and indexes. Automation of these finding aids and making them	appropriate access rights and restrictions to electronic records	applying to value-added services. Policy for charging for networked	policy proposal does not envisage different conditions for electronic records.
10	Australia NEW SOUTH WALES	The draft policy proposal does not envisage changing these arrangements.		Available through public on-line information services and communications networks such as Internet is being planned.	through communications networks. The Archives may provide a gateway service.	access and related services has not been determined	The impact of copyright laws on access to electronic records is not yet clear.
11	Australia VICTORIA	Possible delay due to privacy/security requirements, otherwise accessible upon transfer.	Yes, but some data sets may be unusable as there is no access to the necessary (retrieval) technology.	?	Tapes are recalled and processed by the responsible government department when required. Not yet determined the means by which access will be given on-line to the public. May make a stand-alone PC available in the search room.	Public inspection of records in custody is free of charge. Charging for on-line access of data deposits is not yet determined. A charge for print may be imposed.	No special arrangements for electronic records. Public records are generally available for public inspection upon transfer unless closed to protect personal privacy or any other reasons. Copyright is being considered. Position not determined.
12	Australia WESTERN AUSTRALIA	Not yet resolved.	NA	Fully-documented entries for every series, compiled according to the	Not yet determined.	NA	Not yet resolved. The State's archival legislation defines

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				principles of the Australian Series Registration System.			restrictions.
30	CANADA	30 years privacy security of the state	Yes	Computer-based system before 1990 computer-based cataloguing and standardizing system since (prototype)	Magnetic tapes Floppy diskettes Electronic transmission	1 file 25\$ + replacement of physical stock: CD-ROM = 31.25\$ Tape = 25\$ Diskette = 6.25\$	Freedom of Information Act Privacy Act Control of government information Responsibility for copyright rests to researchers
30	CANADA			Internet		Electronic transmission or Internet: no fees	
33	Canada QUEBEC	?	?	?	?	?	cf. Records Act
35	CAYMAN ISLANDS	Access to electronic transcripts is now possible.	Yes.	Electronic finding aids by Word-Perfect (for text) and Filemaker Pro (database) are available.	On-line access in the presence of an archivist/ archives assistant.	US\$0.30 per A4/letter size print and US\$0.60 per ledger size print.	Same as paper records.
37	CHINA	Records are open to the public when they reach 30 years of age.	NA	NA	NA	NA	NA
38	COLOMBIA	No lapse No restriction (<i>historical</i> archives)	NA	Individual assistance	Listing experimentally	Access free +cost of media	?
47	DENMARK	30 years	Yes	General inventories	Magnetic tapes Documentation	Loan of copy free	cf. Records Act Data Protection Act

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				Computer-based inventory available for staff only <i>(The computer-based inventory is also used for the record management: the actual</i>	of paper		
47	DENMARK			<i>inventory will be placed at the researchers disposal later.)</i>			
55	FINLAND	30 years Privacy Security of the State	Yes	Specific computer-based Finding aids	Tape	Cost of copy 1 hour of retrieval by an archivist : about 45\$	Access free Copyright N.A
56	FRANCE	30 years privacy security of the state statistical secret	Yes	Computer-based general inventory and computer-based specific finding aids	To be decided	To be decided	cf. Records Act cf. MRD Data and Freedom Act
59	GERMANY	30 years privacy security of the state	Yes	General inventory Data base List of holdings A few inventories	Magnetic tapes Floppy diskettes Cassettes DAT	5 mm CPU = 7\$ copy : 1 tape = 60 cts 1 page = 50 cts	According to type of retrieval Anonymity Compulsory
64	Germany BREMEN	30 years	Yes	?	?	?	cf. Records Act <i>[The Archives Act does not apply to public radio services, nor to religious communities (or such with a philosophical character), nor to public services with a juridical personality and their partners.]</i>
66	Germany	No delay after	Yes	Display screen	?	?	Data Protection Act

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	HESEN	processing		listing			Control of government information Royal copyright
68	Germany LOW SAXONY	30 years privacy security of the state	Yes	?	?	To be decided	According to type of retrieval Anonymity Compulsory Technical restraints
90	INDONESIA	NA	NA	NA	NA	NA	NA
91	IRAN	?	?	Display screen microfilmed inventory	Listing	Free	Restrictions not defined
92	IRELAND	30 years delay fixed by each agency	Yes	0	NA	NA	cf. Archives Act privacy
112	MALAWI	As soon as government has given the researchers authority to consult the records.	Yes.	Descriptive lists in forms of typed inventories.	?	A researcher fee of K\$20.00 is imposed on foreign researcher and a local researchers pays K\$2.00.	Restrictions accrue to publication of any article, book or periodical which may have come about due to research from archival records. The Archives will certify the information as correct before any publication and a copy is to be deposited free of charge upon publication.
113	MALAYSIA	These records are kept under the vital records program and are not available to researchers.	NA	Nil	NA	NA	NA
124	NETHER- LANDS	?	?	?	?	Free of charge in principle contribution to cost of special services	cf. Archives Act copyright applicable to products of the National Archives
126	NEW ZEALAND	NA	NA	Archives acquired prior to 1985: inventories	NA	No charges are made to researchers using the archives on-site. Reference fees are	Materials may be restricted under the Official Information Act (on the grounds of commercial sensitivity or

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				based on Record Group concept. Archives acquired after 1985: inventories based on Record Series concept. Computerized finding aids, based on these systems are currently being developed. Electronic records will be identified in the same way as other records.		imposed for written enquiries. Fees are also imposed for on-site users who require research assistance, ie where National Archives perform detailed research for the client.	personal privacy) and Privacy Act. Information matching is a significant restriction in disseminating electronic records.
130	NORWAY	25 years	Yes	Inventories, one for each fonds	File copy seldom cases of retrieval by staff (<i>display screen planned</i>)	Free except photocopy (<i>access fees planned</i>)	Privacy copyright : very seldom
141	ROMANIA	?	?	Computer-based inventory	Display screen listing	Free	Limited number of records available at once
146	SÉNÉGAL	Le délai de la communication. 30 ans	oui			L'accès aux Archives est libre et gratuit.	
148	SINGAPORE	Generally 25 years but special application can be made at an earlier stage. Certain non-restricted records e.g. speeches and oral history	Yes	Inventory list Indexes (on-line and printouts)	Floppy disks Hardcopy Printouts On-line access for certain records such as oral history interviews, speeches,	Reference services are free, but researchers must pay for copies. The fee for data transfer is not yet	The 25-year closed period is only legal restriction imposed by the Archives. Creating/transferring agencies may impose access restrictions for security/privacy reasons. Anonymity arrangement may be made in the latter

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		interviews may be released upon transfer to the Archives Reference Room.			Photographs.	determined.	cases.
152	SOUTH AFRICA	30 years but special application can be made at an earlier stage.	Yes	Synoptic overview list Inventory or Transfer list On-line retrieval of data possible	Probably as copies of originals in some format and medium. On-line search of some databases at the Archives may be possible if compatible software is available.	Reference services are free, but researchers must pay for copies. The fee for data transfer is about US\$2.32 per megabyte. Researcher must provide medium.	The 30-year closed period is only legal restriction. In anticipation of privacy legislation, information infringing personal privacy will not be released. Anonymity arrangement will be made in such cases. National security is also considered. There is no copyright in official records.
157	SRI LANKA	NA	NA	Subject indexes arranged alphabetically.	On-line access not yet available.	Not yet decide	NA
162	SWITZERLAND	35 years	?	Computer-based inventory Documentation on paper	File copy Documentation on paper	Access free Copy : 1 file = 25\$ + cost of media	Privacy copyright: NA
172	United Kingdom ENGLAND	NA	NA	0	0	0	
174	United Kingdom NORTHERN IRELAND	30 years	?	0	NA	NA	NA
175	United Kingdom SCOTLAND	30 YEARS	?	To be decided	To be decided	To be decided	Responsibility for copyright rests to researchers

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176	UNITED STATES OF AMERICA	Enforcement of information right	NA	General inventories lists of MRD holdings	Listing Internet (retrieval on diskettes or CD-ROM planned with an opportunity of extracting files.)(<i>special case: value-added versions of electronic records from the war in Vietnam. On-line access will be provided free-of-charge.</i>)	Cost of media and of copy e.g.: 1 file on 1 medium <100\$ 2nd file on same medium <20\$	Privacy (75 years) Trade secret (30 years) no delay for "permanent" archives
187	ZIMBABWE	In the absence of viewing equipment all electronic records in Archives' custody are not available to researchers.	NA	None.	NA	None.	The Archives is merely the custodian to records, thus access is only through the creating departments.