

DEPOT 2000

Functional Design
for a Digital Depot

State Archives' Service

The Hague 2000

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1 INTRODUCTION

1.1 Aim of this Document

This document describes the functional design of a computer system (the Depot 2000), and has the following aim:

The storage and management of and the provision of access to digital archival records, as transferred to it by government organisations (caretakers). This should occur in such a manner that the archival records can be retrieved, read, and reproduced in their authentic form.

1.2 Background of the State Archives' Service

On the basis of the Public Record Act 1995 [Archiefwet 1995] and the Public Records Order 1995 [Archiefbesluit 1995], the State Archives' Service (SAS) is responsible for the storage of central government archival records that are eligible, on the basis of a selection procedure, for permanent storage. After a maximum of 20 years, government bodies transfer these archival records. In the (Draft) Ministerial Regulation relating to the ordered and accessible condition of archival records (in accordance with Article 12 of the PRO 1995), which will probably come into effect at the end of 2000, further requirements are formulated with regard to the authenticity, organisation and accessibility of archival records. At the moment, the State Archives' Service does not have any facilities for the adequate storage of any digital archival records that are presented to it.

1.3 Positioning of the Depot 2000 Project

The storage of digital information is a worldwide problem. The cause lies with the rapid changes or developments taking place in information and communication technology (ICT), which entails that all digital information that is stored ages quickly if no measures are taken. It is because of this that ways or strategies must be found which make it possible for digital information and archival records to withstand the rapid technological changes without loss of essential information. The State Archives' Service (SAS), responsible for archival records that are eligible for permanent storage because of their cultural-historic importance, is trying to achieve this by means of this project. Given that measures relating to the issue of storage must be taken in good time, namely when systems are at the design stage, the Ministry of the Interior and Kingdom Relations (MIKR), responsible for co-ordination of the information policy for central government, is also involved.

A project entitled "Digital Depot" has been started as part of the Digital Durability project, which consists of two sub projects: the Testbed project and the Depot 2000 project. The Testbed project (started in November 1998) focuses on the development of storage strategies for digital archival records. The project is being implemented by the SAS in collaboration with MIKR, and is focusing on

the entire government. Depot 2000 is a project which must result in a facility which makes it possible for the General State Archives (GSA; later to be called the National Archive) to permanently store and manage digital archival records. It seems most obvious for there to be interaction between the Testbed project and Depot 2000, as soon as this has been built and implemented: the results of the Testbed project can be applied in Depot 2000, and, likewise, any questions which arise in relation to the management of digital archival records in Depot 2000 can be put to the testbed.

There is also a close relationship with the Record Keeping System (RKS), a different part of Digital Durability, which focuses on the development of the digital archive function for the government. After all, an RKS also includes a storage function, in which similar provisions to those described here must also be made. The digital archival records created and managed within government organisations will, moreover, eventually be transferred, according to current rules, to the State Archives' Service (National Archive). Both the RKS and Depot 2000 fall under the regime of the above-mentioned (draft) Ministerial Regulation where archival records that are eligible for permanent storage are concerned.

Finally, there will (eventually) be a relationship internally with the management system ABS/Archeion, that is now being used for paper archival records. It seems obvious to include details of digital archival records being managed, in this system too, so that a consistent overview of all of the archival records being managed, in whatever form, is available, and consistent management is possible. That is why allowance must be made in this design for the data structure of the ABS/Archeion.

Depot 2000 will also have to connect up to search systems that are present, or that will be developed in the future at the GSA or National Archive. These search systems will relate to both paper and digital archival records, and do not thus form part of this design.

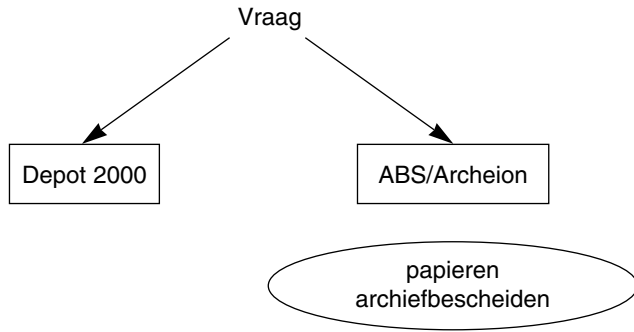


Figure 1 Temporary Situation after Implementation of Depot 2000

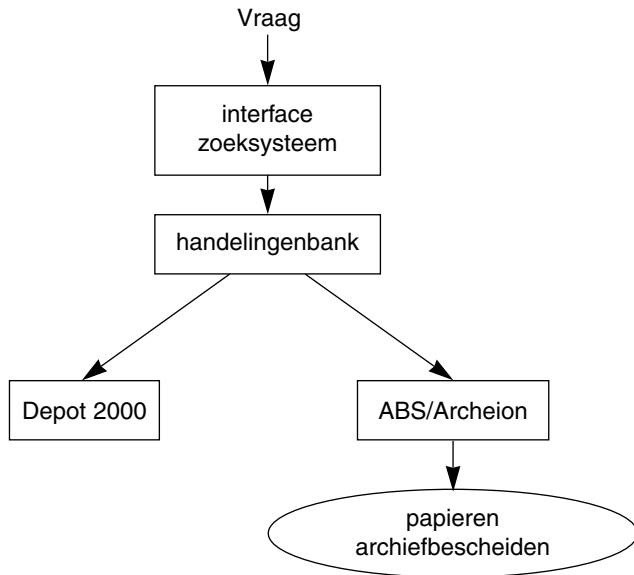


Figure 2 Desired Future Situation

2 GENERAL DESCRIPTION

2.1 The Depot 2000 System

The aim of the Depot 2000 system is to facilitate the storage and management of and the provision of access to digital archival records for a longer period of time. The archival records themselves and the corresponding metadata (contextual information, in particular) are stored and managed.

Technological developments entail that it might become difficult to read digital archival records, and these might even be lost altogether. Management of such records should, therefore, anticipate technological aging, and take the most appropriate measures at the right time.

Conditions are imposed on storage and management in accordance with legislation on the subject. Essential to such legislation are the safeguards for the authenticity of an archival record. This refers to the preservation of the condition of the record as it was when accepted by Depot 2000.

Supporting the primary archive function is a systematic registration of all activities carried out. This is necessary for it to be possible, at all times, to give an account of what has been done or, or what has happened in terms of the management of records.

DEPOT 2000

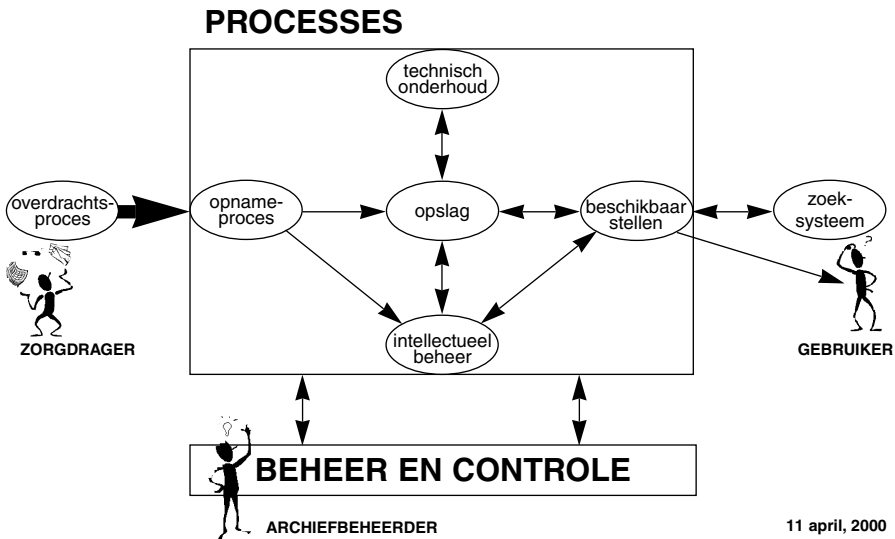


Figure 3 Overview of the Depot 2000 System, Intended for the Management of Digital Archival Records

An aspect that must not be forgotten is the maintenance of the system. The rapid developments in the IT sector will entail that not only the archival records, but also the Depot 2000 system itself will have to migrate. It is expected that this will have to happen after every 3-4 year period, which will, in itself, have consequences for the computer files (and archival records) that are managed by it. The reason that this is mentioned here is that any such complete migration of the system requires an extremely precise approach and procedure, and careful documentation.

2.2 Basic Functions

The Depot 2000 system, as depicted in Figure 3, provides a number of basic functions. These functions are grouped as follows:

1. The **registration** of Acquisitions and the corresponding metadata
2. The **storage, management, maintenance** and **verification** of Archival records and their metadata
 1. The **querying** or **accessibility** of Archival records (search, presentation).

(1) Registration

The "Registration" process forms part of the process where (parts of) archives are acquired. The last step is entry into the Depot 2000 system. Registration includes the process in which the archival records received are registered, the files are verified and, after acceptance, (temporarily) located in the Depot 2000 system. The process is concluded with either a rejection, if matters have not been correctly transferred (i.e. they do not comply with the conditions), or an act of transfer, which is signed and sent to the Caretaker.

(2) Storage, Management, Maintenance and Verification

The system should comply with the requirements stipulated in respect of durability, availability and authenticity. These have been set out in the (draft) regulation relating to the ordered and accessible condition of archival records 2000. These also form the basis for the management regime (rules, procedures and requirements which apply to the Depot 2000 system). The person who is responsible for management, bears these in mind, and gives account of his management activities.

For the benefit of management and querying, part of the (transferred) metadata (relating to origin and authenticity, for example) are stored separately, for performance reasons, while the relationship with the archival records concerned is retained.

Management includes the periodical testing and, where necessary, technical maintenance of stored Archival records for retrievability, readability and the currency of the storage formats used. Improvement may consist of the updating or amendment of metadata, storage refresh, or conversion to a current storage format.

It is essential that all activities carried out in respect of archival records stored in and managed by the system are recorded, so that an account can be given at all

times, and a reconstruction of what has happened be made.

In addition, management also includes the measures customary for the regulation of the entire system, and for the arrangement of access to the system. This also includes an up-to-date description of the system, together with its history. If, for example, system components are replaced, or the functionality of the system is adjusted, this should be precisely registered.

(3) Accessibility

Accessibility includes a process consisting of searching, selection (both on the basis of metadata), checking of accessibility restrictions, and the retrieval and display of Archival records.

The interface is a sober user interface, intended for use by a matter expert user. It will be possible to search on a combination (still to be determined) of fields from the metadata set. The development of a more advanced user interface, intended for use by the end user/researcher, does not form part of this project. For this, the Depot 2000 system should be embedded in a search system that relates to both digital and paper archival records.

The requested Archival record should be accessible together with a metadata set (still) to be determined.

2.3 Organisation

The State Archives' Service (or later: the National Archive) owns the Depot 2000 system. The State Archives' Service is responsible for the acquisition process, management and accessibility.

The following tasks can be identified:

- The development of the storage requirements (and supervision by the State Archives' Inspectorate to ensure that the requirements are complied with).
- The design of a procedure for the transfer, and the arrangement thereof.
- The maintenance of the logical occurrence, namely the documents, or all data, such as those which are presented on the monitor.
- The maintenance of the digital result of the above, in the form of the computer file .
- The provision of access to the digital archival records.
- The management of the configuration data.
- The database management (storage, consistency, backup, recovery, performance).
- The management of the technical infrastructure (the computer platform).

2.4 Assumptions / Framework

For the benefit of the demarcation of the system to be developed, the following assumptions have been formulated:

1. The actual storage and management of the archive (i.e. Archival record + metadata) takes place in an online-database (Oracle) at a logical as well as a technical level (in other words: we are not concerned, at the moment, about

- physical storage, storage of any overflow to CD jukeboxes, tapes or other mass storage environments)
2. No link is laid in the Depot 2000 system to physical archival records (papers) that are managed
 3. The Depot 2000 system restricts itself as far as the provision of access is concerned (at present) to an retrieval-interface, which is of a technical nature, and requires a professional user. It is not yet intended for use in the reading room. Search and retrieval may be effected with the aid of SQL or via catch-words or via full-text retrieval. The average reading room user will probably not be able to do this, but possibly an Archives' Service employee will be able to assist him/her. No great effort is to be expended, at the present time, in making a search and retrieval interface user-friendly.
 4. Also falling outside the scope of the Depot 2000+ project are:
 - Migration and emulation.
 - Any settlement and payment of services provided.
 - Registration of visitors.
 5. For the time being, it is assumed that public accessibility of the archival records stored in the Depot 2000 system, will take place via a duplicate system, in order to prevent damage being done to the 'originals'.
 6. Origin also forms part of the description of archival records. Given the developments which are taking place in this field (the so-called 'Operations Bank'), Depot 2000 only includes a brief description, which is limited to a link to the name of the archive former, task and process. This should provide sufficient information for a link to the operations bank to be possible in the future.
 7. Demarcation of ABS/Archeion: the Depot 2000 system is a stand alone system; there is no technical link-up with ABS/Archeion; the same terms and definitions have, however, been used wherever possible and/or relevant. A complete check of the similarities and differences which exist between the terms and definitions of both systems will be postponed until opinions about the Depot 2000 system have stabilised.
 8. Transfer agreement data are kept outside the system boundary of the Depot 2000 system.
 9. Home address data (from archive-forming relations, for example) are kept outside the system boundary of the Depot 2000 system.
 10. It still remains to be determined how databases will be dealt with. No allowance has been made for this in the current design.

3 PROCESS MODEL

3.1. General

The processes which will form part of the Depot 2000 system will be described in this chapter.

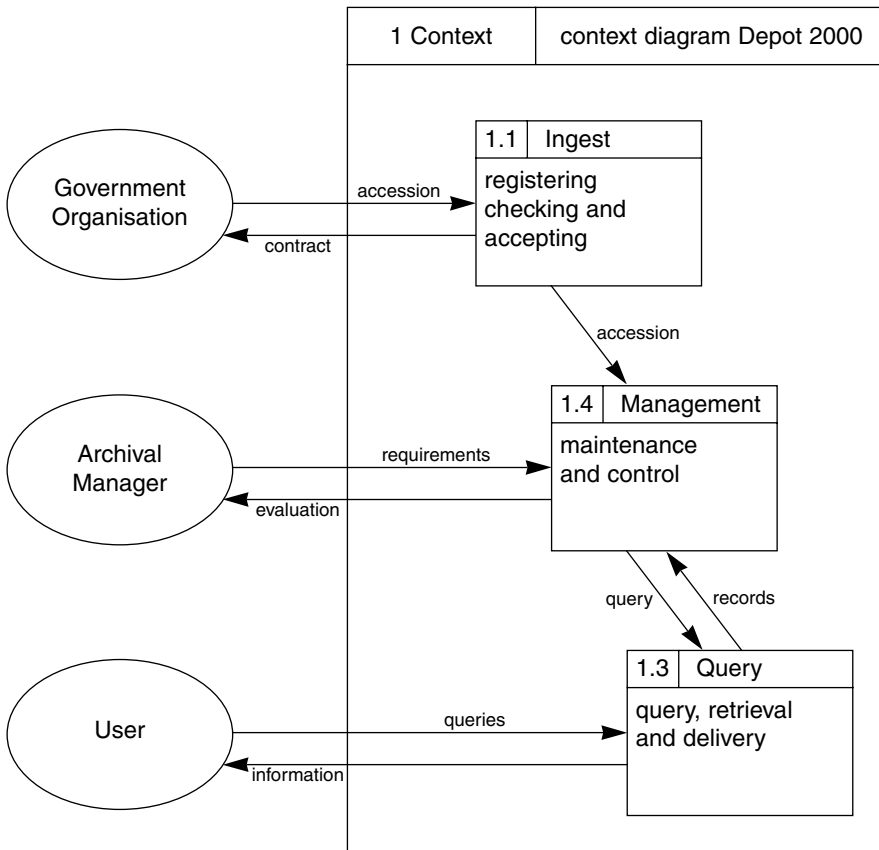
The method of registration makes use of the DFD (Data Flow Diagram) drawing technique, supplemented by brief descriptions per process part.

The detail level at which the processes have been developed is reasonably global. Below follows a general overview (the zero level) and the detail level for most of the process parts.

3.2. Depot 2000 System (Process 0)

An overview of the Depot 2000 system process is given in Figure 3. The process parts, as described in the general description, are to be found in this diagram.

Context Diagram Depot 2000



Process 0

The following subdivision and numbering have been adopted:

Registration (Process 1.1)

- (1) Registration (Process 1.1.1)
- (2) Technical verification (Process 1.1.2)
- (3) Contents verification (Process 1.1.4)
- (4) Consolidation (Process 1.1.3)

Processing, Management, Maintenance and Checking (Process 1.4)

- (5) Intellectual management (Extraction and Maintenance of metadata) (Process 1.4.3)
- (6) Logistic management and management (Process 1.4.1)
- (7) Technical management (Maintenance of Computer files) (Process 1.4.2)
- (8) Configuration management (Process 1.4.4)

Accessibility (Process 1.3)

- (9) Query (Process 1.3)

3.3. Registration (Process 1.1)

Before it is possible to describe the process, it is necessary to describe the input; this occurs in the delivery instructions, intended for the government bodies that have to/wish to archive archival records in the Depot 2000 system.

3.31. Delivery Instructions

With regard to storage format, the ministerial regulation stipulates the following:

- | | |
|----------------|--|
| Text files | Portable document format (PDF), SGML or XML accompanied by a Style Sheet (XMS). |
| Database files | The original format or ASCII (flatfile, with field separators) accompanied by documentation about the structure of the database (at least a logical data model); queries should be recorded in the query language SQL (SQL2). A description of the database structure in XML can also be provided. |

For the time being, this document describes the transfer of the following three types of archival record:

- Text files
- E-mail messages, including attachments
- Simple spreadsheets, that is, without complicated formulas.
- [still to be determined: databases].

The delivery instructions for each type of digital file are described below. These form part of the entire transfer procedure.

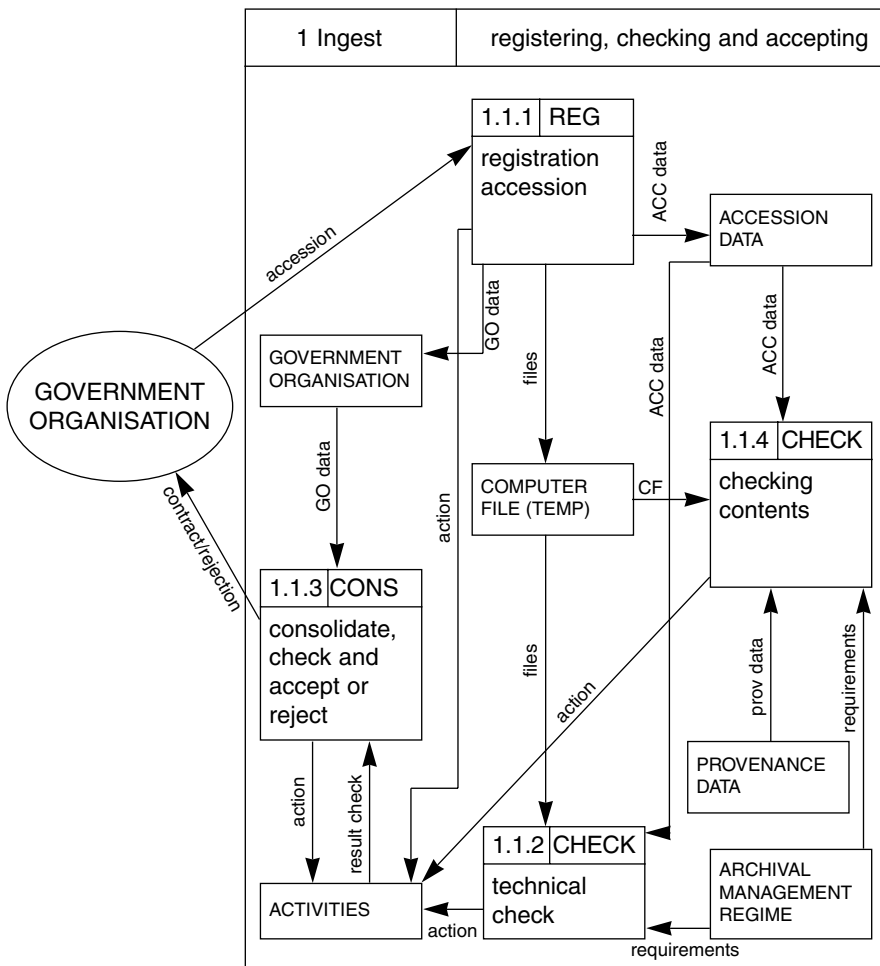
3.31.1. The Delivery of Text Files and Spreadsheets

Text files and spreadsheets should be delivered in PDF or XML. The PDF computer file settings will be described in detail in Attachment C, on the basis of the Acrobat Distiller v4.0 setting screens, and on the basis of the settings possibilities of Acrobat v4.0.

General guidelines for the settings are:

1. All of the fonts used in the text file are stored in the PDF Computer file.
2. The PDF generator (for example, Acrobat Distiller) does not compress files and spreadsheets. If compression is required for efficient transport or storage, this occurs separately by compression methods based on open standards.

Ingest



Process 1.1

3. The PDF generator (for example, Acrobat Distiller) does not encrypt files and spreadsheets. If encryption is necessary for safe transport or storage, this occurs separately by encryption methods based on open standards.
4. The resolution does not need to be better than that of the original.
5. Navigation tools within the Acrobat Reader, such as Bookmarks and Thumbnails, are used wherever possible.
6. Security settings are designed to freeze the Computer file as far as possible, without hindering its (re)usability. So: not being able to add any annotations, or change text, but still being able to select text.
7. In the case of spreadsheets, additional documentation will have to be provided about the formulas used.

Guidelines relating to XML are still to be determined.

3.32. Registration of Acquisition (Process 1.1.1)

The registration of the Acquisition is the first step within the registration process, which forms part of the acquisition process as a whole.

The Registration process consists of the following parts:

Receipt of Acquisition (= not really a process)

This refers to the receipt of the Acquisition: i.e. the collection of Archival records delivered in the form of Computer files, with a covering letter (on paper or in digital form).

In digital form, the Accompanying letter forms part of the collection of Computer Files delivered. The Accompanying letter includes at least: a short description of the archival records transferred (normally the name of the archive former), stating period, name of the transferring party, the number of computer files and their size, also possibly the compression method and/or the authentication method used, together with its key.

The archival record files are delivered in PDF or XML (with style sheet), possibly accompanied by files in the original format. The entire delivery might have been authenticated with a digital or electronic signature. The corresponding (structured) metadata should be delivered in a separate file.

1.1 Recording Acquisition Data (Process 1.1.1).

Registration of the Acquisition occurs on the basis of the Accompanying letter and identification (that is to say, the coding (numeral or alphanumeric) under which the acquisition is being transferred and which is assigned to all files, diskettes and accompanying papers etc.). The following data are registered for each Acquisition: the name of the transferring party (= caretaker), date of receipt, number and size of the computer files, legal title, and description of acquisition. As long as the computer files have not undergone (technical or content) verification, and been accepted, they are temporarily stored in a protected disk space.

3.33. Acquisition Technical Verification (Process 1.1.2)

The first step is the checking of the signature, if this is present, and to open the file or files.

Technical Status Check

The completeness / presence of the Computer files presented is verified on the basis of the Acquisition data (is the number and size correct?). Guidelines for technical verification are the requirements formulated in the Management regime, and any agreements that have been made with the transferring party.

The receiver also checks the computer files that have been delivered for the presence of viruses (anti-virus programme), readability / size, technical processability (this supposes a platform that can cope with PDF, XML or both).

If approved: The computer files are placed in temporary storage; step 3.5 may then be taken.

If not approved: notification in Activity. The consolidation process detects this and sends notice of rejection to the Caretaker.

3.34. Acquisition Content Verification (Process 1.1.4)

Verification Agreements

The Archives' Service verifies whether the transfer is in accordance with the agreements made: have the agreed files and/or records been delivered? The agreements relating to the transfer are registered separately (on paper), and serve here as input, and are compared with the acquisition data registered. These are questions such as: is this the right period, from the right archive former, is it complete (for example: are no years missing?).

If agreed: continue with the following step 'Verification of Metadata'.

If not agreed: continue with Process 1.1.3 (consolidation)

Verification of Metadata

The receiver also verifies whether all the metadata which relate to a particular archival record, in respect of the description (dossier list) and origin of archival records, on the basis of the transfer agreement, are present and correct. In this case too, it should be possible to open and read it or the file(s).

The data presented are also checked against the metadata already available about the archive former (origin data).

(No) approval: registration of action and result in Activity, and then proceed to 1.1.3 (consolidation).

3.35. Consolidation of Acquisition Process (Process 1.1.3)

The results of the previous two processes are verified, and if all previous steps have been approved, an act of transfer is sent to the (delivering) Caretaker (outside system).

If not approved: notification of rejection to Caretaker stating reasons for rejection (outside system).

The actions carried out and the result are recorded in Activity.

3.4. Processing, Managing, Maintaining and Verification (Process 1.4)

3.41. Intellectual Management (Process 1.4.3)

Both of the following processes are regulated by the requirements and rules which have been set out in the Management regime.

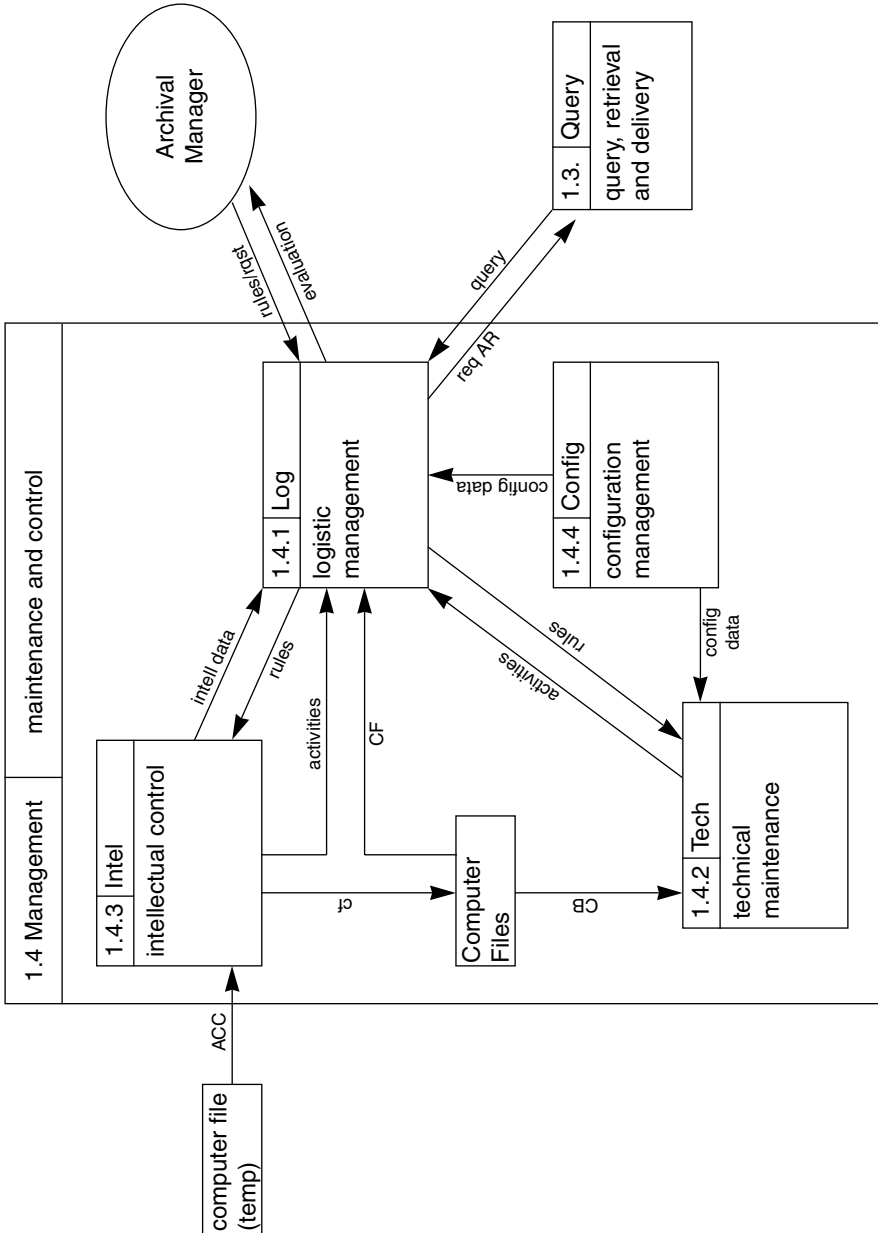
3.41.1. Extraction and Storage of Metadata, and, Where Necessary, Their Authentication (Process 1.4.3.2)

In this process, the metadata should be extracted from the metadata file also supplied, and be stored in a database. This is necessary for management, and to facilitate a faster performance of the search.

The following data are involved:

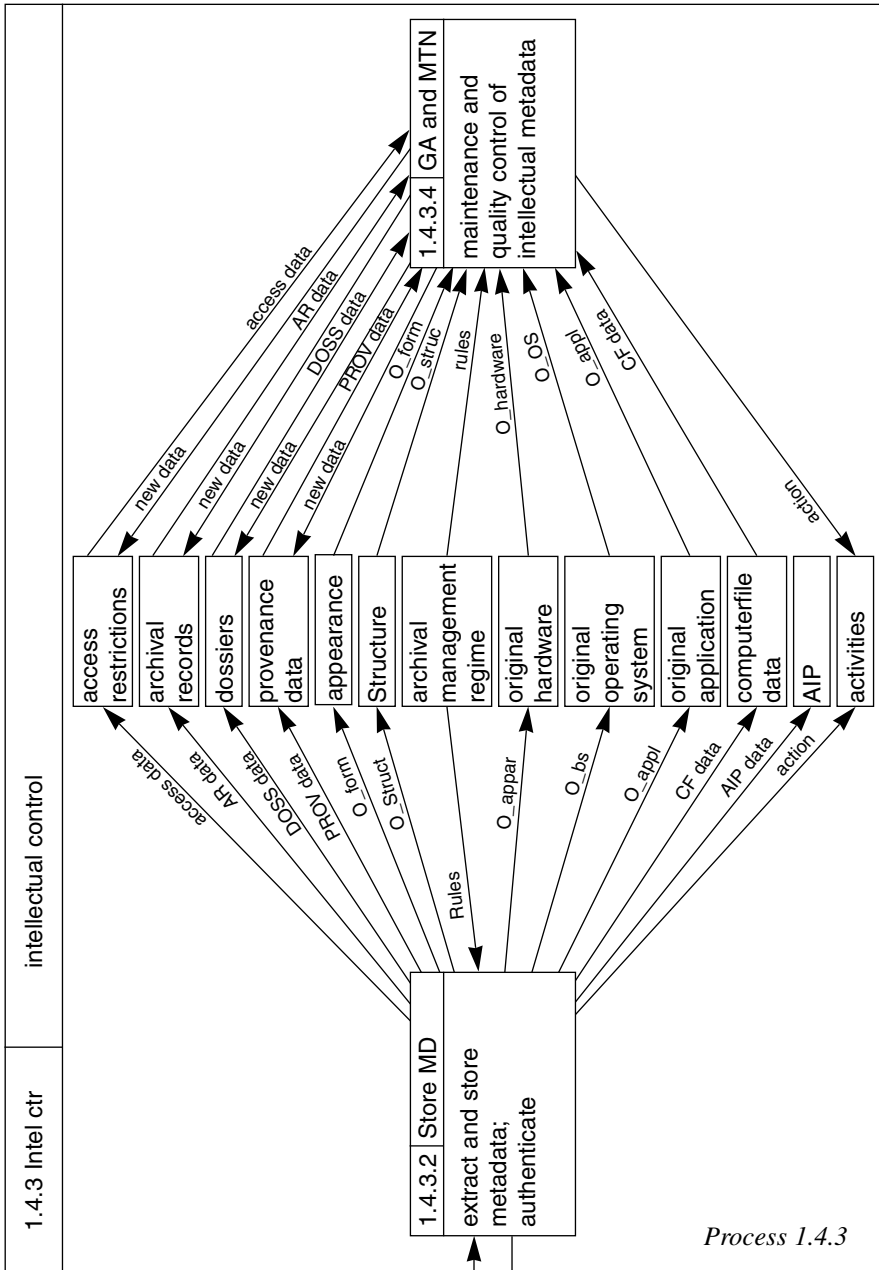
- (1) Storing of data that indicate the relation between Archival records (the separate documents/archival records and the dossiers?) and Computer files, of which they consist. This is necessary, as a document might originally have been stored in one or more computer files. If, for example, the document consists of text and a picture, there will, for example, be a Word-file and a PPT-file, or a TIFF-file. For the purposes of transfer, these will be converted into XML or PDF files.
- (2) Storing of the Technical management data relating to the (current) Computer file. These are necessary in order to be able to open/read the computer file, and to manage it.
- (3) Extraction and storage of the Technical management data relating to the Original application software, -system software and – computer platform.
- (4) Extraction and storage of data relating to the original form and structure
- (5) Extraction and storage of the intellectual data relating to the following data involved in the process: Archival records,
Dossiers,
any accessibility restriction,
the Origin.

Management



Process 1.4

Intellectual control



Process 1.4.3

The computer files, together with the archival records, are saved as a temporary file and are available for verification.

A report is made of these activities in Activities.

3.42. Maintenance of Metadata and Quality Control (Process 1.4.3.4)

The following parts are recognised within the metadata maintenance process:

Maintenance of metadata: correction or updating of the metadata on the basis of external information.

Quality control of metadata: this is a periodical check, which particularly looks at the contents integrity of the given data. Any inconsistencies detected are corrected.

A logging is maintained of all amendments. A report is made of all checks carried out under Activities.

3.43. Logistic Management (Process 1.4.1)

Logistic management consists of the following processes:

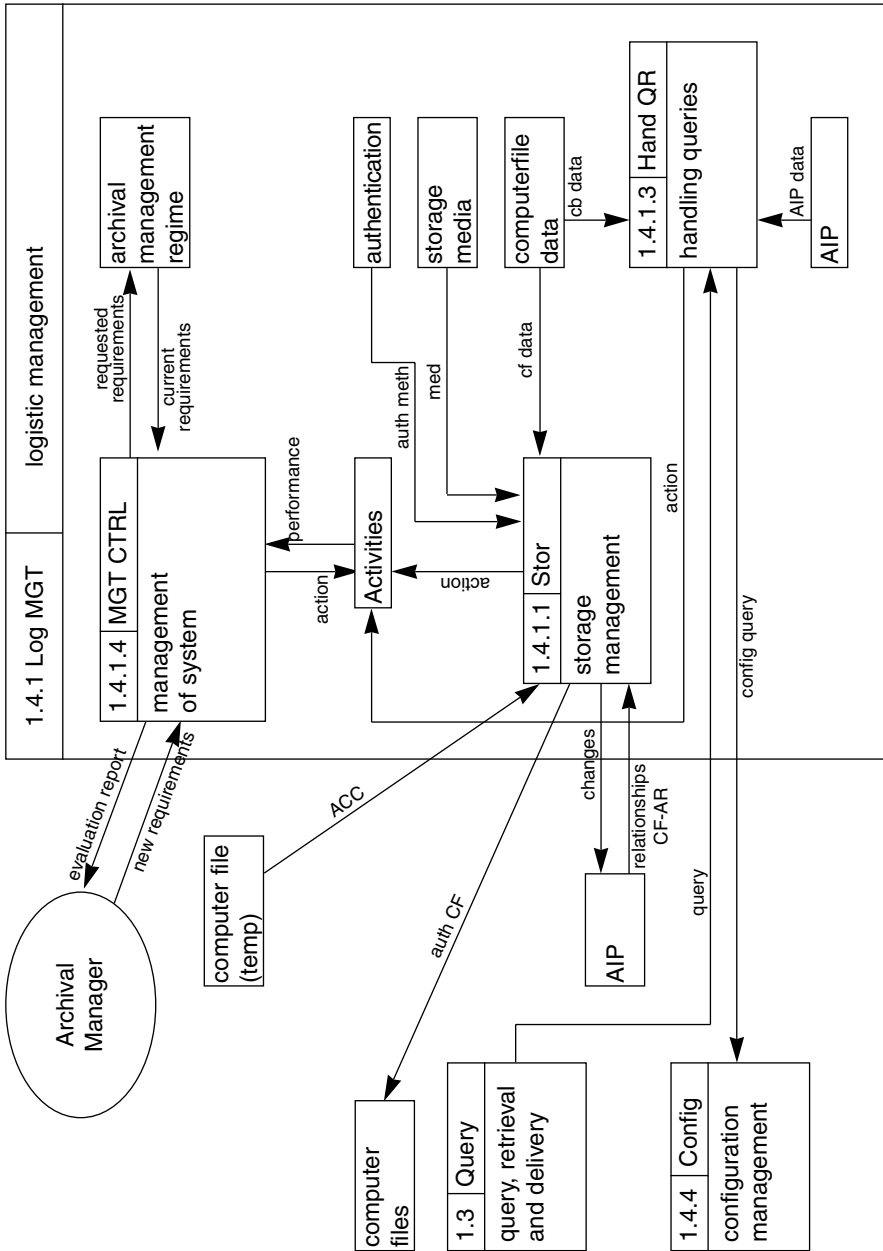
Management of the Management (Process 1.4.1.4):

The requirements stipulated, from an archival point of view, with regard to the system and the management of digital archival records and the corresponding computer files, are registered and maintained here. The quality and the performance of the system are also measured here (do the system and the management of the digital archival records comply with requirements?). This can be reported on, if necessary. The system can generate the following reports:

N.B. the entities have been printed in **bold** print, the data items have been printed in *italics*.

1. Overview per type of **activity** to which **archival record** or which **computer file** that **activity** is applied, and what **activity.result** that has produced, set off against the (current) management regime requirements in a certain period.
2. Overview per **archival record**, which **activities** have been applicable to this **archival record**, with what **activity.result**, set off against the **management regime requirements** in a certain period.
3. Overview per **computer file**, which **activities** have been applicable to this **computer file**, with what **activity.result**, set off against the **management regime requirements** in a certain period.
4. Overview of **requirements**, per **management regime**, which have been applicable to **archival records** or **computer files**, with what **activity.result**.

Logistic Management



Process 1.4.1

5. Overview per **archival record**: which **computer files** correspond to the **archival record**.
6. Overview per **computer file**: which **archival records** does the **computer file** contain?
7. Overview of **archival records**: are there **archival record.accessibility restrictions** on these **archival records**, and if yes, according to which **accessibility clause**, and what is the **archival record.date_end_accessibility restriction**?

Processing and Storage of Acquisitions (Process 1.4.1.1):

1. The Acquisition, still stored in temporary storage and in the structure in which it was delivered, is split further, if necessary (and/or merged).
2. Division or merging occurs on the basis of the file attributes and the rules (requirements) which apply to the system. Division or merging may not effect the relationship between AF and CF.
3. It is checked whether the structure and nomenclature of this storage is in accordance with the requirements stipulated by the management regime.
4. If all of the necessary actions have been taken to ensure that the file is in the correct (physical) form, and it has been identified, the file is authenticated (in accordance with the valid authentication method) and saved as a ‘definitive’ Computer file to the desired location (Storage medium).
5. The choice of the optimum location, on the basis of the file attributes, the storage requirements, space available and in use. This is recorded in Activities. The files are then saved to the location chosen.

This function also covers the regulation of the storage capacity available. This can periodically lead to the relocation/re-organisation of files. The reasons for this are: the improvement of performance and efficiency. This is comparable to the ‘Explorer’ function in Windows.

The data from the Computer files are updated accordingly. This might entail the addition of a new location identifier, or the amendment of data from a Computer file that had been stored at an earlier date.

Processing of Search Queries (Process 1.4.1.3)

Pursuant to a search query (consisting of the identification of a Archival record) which is received from the Query process (Process 1.3.1), the data of the relevant Computer file are looked up on the basis of the AIP (waar staat dit voor?) (the relationship between AF and CF) data. These are then sent to the Configuration Management function (Process 1.4.4).

Picking up the parts of an Archival record and compounding them into one Archival record to be displayed. In the event that several Archival records have been merged into one Computer file, extraction should also take place.

3.44. Technical Management (Process 1.4.2)

Technical management consists of the maintenance of Computer files in a (technically) readable and usable form, based on the requirements (management regime) that are stipulated. For the time being, the maintenance of the files will be limited to regular conversions and stored data/media refresh. To what extent migration or emulation will also be possible, depends on the results that are obtained from the Testbed project. Such strategies require a considerable adjustment to the digital depot.

The following partial processes have been recognised:

Quality Control (Process 1.4.2.3)

Periodical quality control of the files, for compliance with the criteria stipulated with regard to technical and logical occurrence (storage format, storage medium, technical readability).

Maintenance of the Medium (Process 1.4.2.1)

The periodical refresh and rewriting of files (for example, also conversion from CD to DVD), on the basis of storage requirements, or on the basis of the results obtained from the quality control.

Conversion (Process 1.4.2.2)

The periodical conversion of files, on the basis of storage requirements, or on the basis of the results obtained from the conversion quality control.

Conversion is subdivided into the following steps:

- Actual conversion
- Quality control of the technical condition of the computer files (storage format, readability, etc.) and logical occurrence of the archival records.

As soon as a converted file has been checked for quality (that is to say, the quality of the authenticity of the record) in the conversion process, and has been approved, it is stored temporarily.

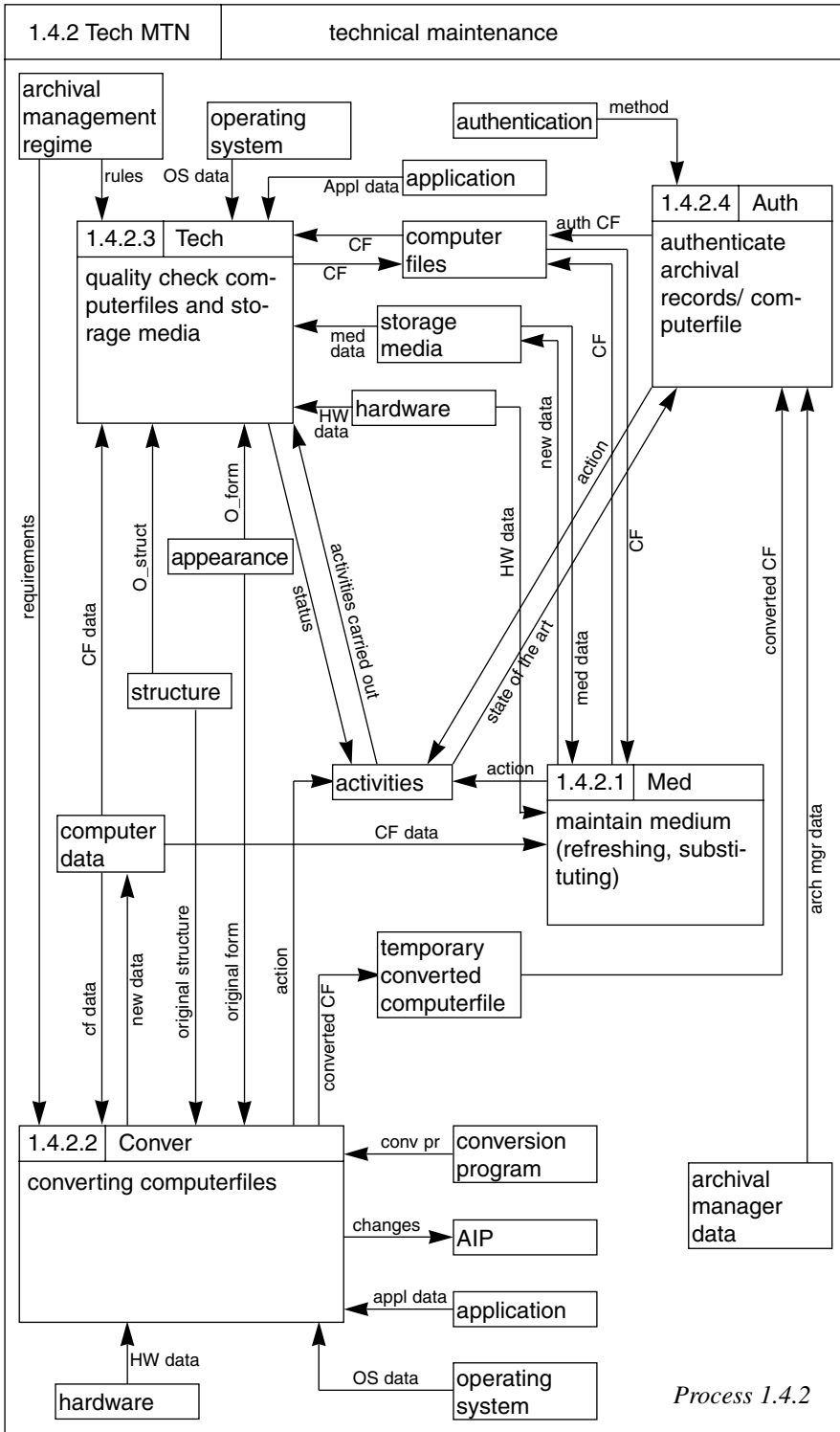
Generally, a special conversion programme will be used for the conversion.

Authentication (Process 1.4.2.4)

The converted file is retrieved from temporary storage and authenticated in accordance with the method currently valid. A record is made of the date, time, method used and the person who carried out the authentication.

The computer file is then stored, and (any) old version is deleted. Here too, a report is drawn up, mentioning the date and time.

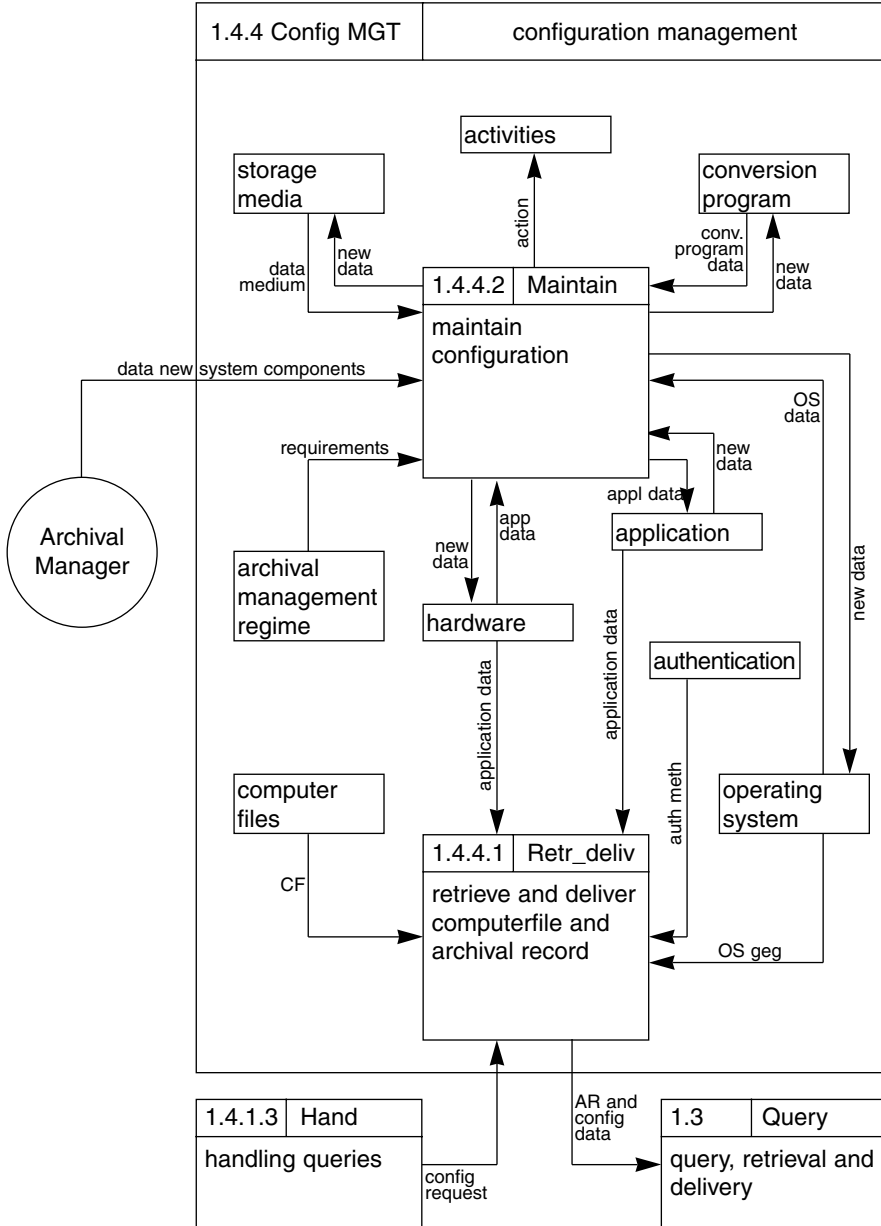
Technical Maintenance



3.45. Configuration Management (Process 1.4.4)

Management of the configuration focuses on the registration, updating and installation of the Items (tools) that are required for the maintenance of a depot for the durable storage of digital Archival records.

Configuration Management



Process 1.4.4

Tools include:

- the software for the reading and displaying of Computer files,
- the RDBMS used for the management of metadata
- any software tools
- conversion software (which has been especially designed to convert the computer files into a new version)
- the operating systems used
- the hardware components used
- any network components used
- and the storage media.

Limited migration is also possible, if, for example, a new version of Oracle has to be installed, or a new version of the operating system. Proper procedures will have to be outlined here too.

The following partial processes have been recognised:

Maintenance of Configuration (Process 1.4.4.2)

During configuration management, record is kept of the system status (platform: hardware and operating system, application software, storage media and conversion software, any software tools). These data relate to the present situation as well as their history (what was available, when).

The Maintenance of Configuration function includes the registration of new components, and monitoring that these comply with the relevant requirements (Management Regime). The activities carried out are recorded in Activities.

If the Archive Manager considers it necessary (on the basis of the relevant requirements), components will be replaced.

The new components must be installed, equipped or replaced, and made available for use, and the data relating to it should be registered. The result is recorded in Activities.

Retrieval and Delivery of Archival Record and the Corresponding Computer File and Configuration Data (Process 1.4.4.1)

On the basis of the data received from the Search Query process (Process 1.4.1.3) with regard to Computer file (type) and Record, data about the Storage medium, Application, Hardware and Operating system are located, and the relevant Computer file (there could be more than one, depending on the nature of the archival record: for example an e-mail and an attachment, or a multimedia document) retrieved and opened (knowledge of the Authentication method used will be required here). The Archival record is checked and/or extracted (if the CF consists of more than the documents requested) and then sent, together with the necessary configuration data (Application), to the Display Archival Record process (Process 1.3.3.).

3.5. Query (Process 1.3)

The purpose of the query process is to locate archival records within the Depot 2000 system, select them and, if required, to make them accessible. In the first instance, the Depot 2000 system is intended for the manager who is familiar with (the content of) the system

The process is divided up into the following parts:

Locate and Retrieve (Process 1.3.1)

The Querier is presented with a Search form, on the basis of which he/she is able to formulate a search query. The search form is used to locate and present the Archival records. It includes the following fields:

Dossier title

Dossier_classification_attribute

Year_beginning (of Dossier)

Year_end (of Dossier)

Name_archive_former (from Origin)

Subject (of Archival record)

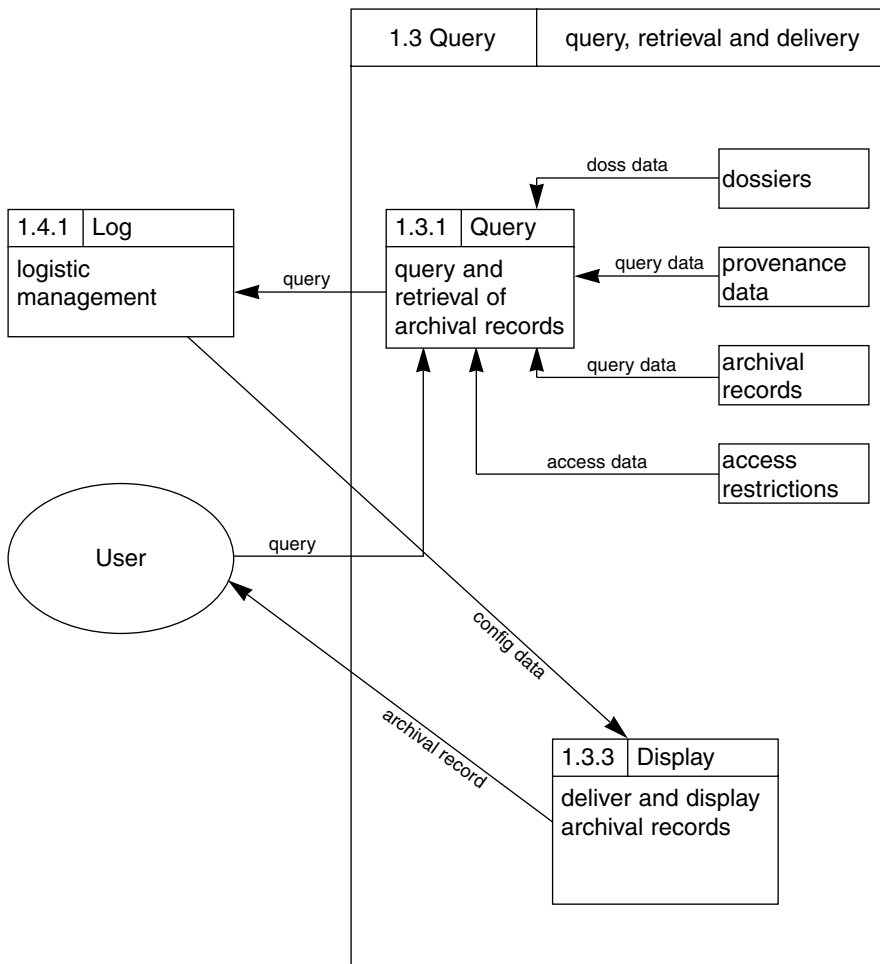
The selection may thus be carried out on a combination of the Intellectual data (Origin, Dossiers and Archival records). The Querier can request an Archival record from the list of Archival records, insofar as it is not subject to any accessibility restrictions. Non-accessible Archival records may not be requested. It is difficult (for the user) to query the reasons for the Accessibility restriction (from accessibility).

The data relating to the Archival records required (their identification = ID_archival_record and/or ID dossier) are passed on the Logistic Management process (Process 1.4.1.3, Processing of Search Queries) for processing.

Display Archival Record (Process 1.3.2)

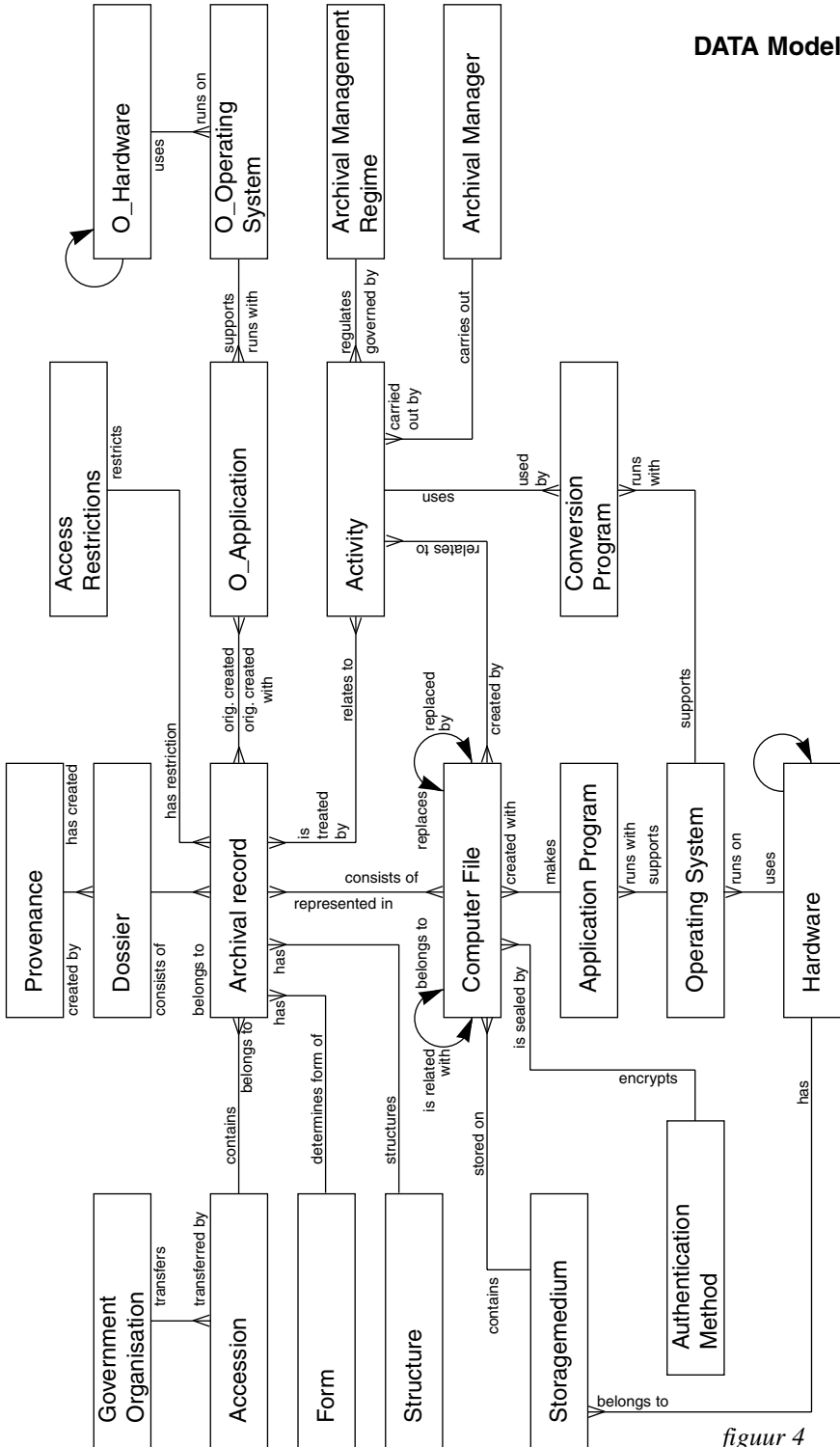
The data relating to (i) the Computer file (whether or not extracted), (ii) the necessary application and (iii) (insofar as necessary) the platform, are delivered from Configuration Management (Process 1.4.4.1 Retrieval and Delivery of Archival Records) to this process. The application is started from this process, and the Archival record (one or more) is displayed.

Query



Process 1.3

DATA Model



figuur 4

4. DATA MODEL

The data model has been defined with the aid of the ERD (Entity Relationship Diagram) technique. This model will be described in detail in this paragraph. Archival records are delivered in the form of computer files. In practice, this will not always be 'one on one'. In the event of delivery in XML, for example, there are several files which belong together. The following form part of the related Computer files:

- XML + DTD + XMS
- Mail + attachments

4.1. Data Model Entities

The following entities are represented in diagram form in Figure 4. NB. Attributes marked with an * are compulsory fields.

Acquisition Data

In Acquisition Data, data relating to the Acquisition are recorded. An acquisition consists of a number of computer files and, possibly, a covering letter with information on what these files contain. The computer files contain the archival records, including corresponding metadata, presented by the Caretaker to the Archives' Service for storage. The format of the computer files is either PDF or XML. A computer file may also be presented in the original format (Word, for example).

A distinction must also be made here between metadata relating to origin and authenticity (delivered as part of the Acquisition), and metadata necessary for management (produced during management by the Caretaker). The last category includes a list of dossier titles and the period.

In Depot 2000, the data relating to the Acquisition are stored separately. The content of the Acquisition is checked and, once approved, stored; the metadata are extracted.

ATTRIBUTES

- *ID_acquisition:** [NUM, 10]
- *date_receipt:** date on which the Acquisition was received and registered [date field: YYYY/MM/DD, automatically becomes system date]
- *description:** name of archive former from whom the archival records originated. [CHAR, 250]
- *period:** years spanned by the archival records. [CHAR, 9]
- *title:** The legal basis on which the archival records have been acquired. [CHAR, 80]
- receiving department:** department within the GSA/NA, which receives the acquisition [CHAR, 80]

- ***manner of transfer (for example: data carrier):** registration of the manner in which something is delivered, that is to say: type of carrier, or via transmission [CHAR, 80]
- ***description of files delivered:** per type, the number of computer files, of which the Acquisition consists; the type might, for example, be PDF, XML, or another format, with version number. [CHAR, 240]
- ***ID-Caretaker:** [NUM, 10]

Activity

All activities that have been carried out with regard to the system as a whole or to sections of it, the archival records or computer files managed. This includes, amongst other things, amendments to the registered data, verification, conversions, authentication or other management activities carried out. The result of these activities is always recorded.

For example, conversion actions: the result of the conversion of a computer file into a new storage format is recorded.

ATTRIBUTES

- ***ID-activity:** [NUM, 10]
- ***start activity:** date and time at which the activity started; [date field, YYYY/MM/DD; and time] system date and time, this cannot be altered after it has been saved
- date_end_activity:** date on which the activity ended; if activity was carried out over one day, this field may be left empty. [date field, YYYY/MM/DD], system date, this cannot be altered after it has been saved
- ***description of activity:** further description of the activity which has been carried out, with an indication of what the activity related to. Examples: - technical verification of specified acquisition
- amendment of accessibility data
- conversion of specified computer file
- query of specific archival records
[CHAR, 100] checked by reference table of permissible values.
- ***result_activity :** Description of the result of the activity carried out. In the event of a conversion, record is made here, for example, of whether information was lost, which conversion programme was used, which information was lost, whether this is acceptable or not, which procedure was followed, etc. (there is a relation here with requirements/procedures) [CHAR, 400]
- ***ID_management_regime:** [NUM, 10]
- ID_conversion_programme:** [NUM, 10]
- ***ID_archive_manager:** [NUM, 10]

Hardware

The hardware which is available and necessary for the application software to function. The history of the various components is retained.

Has a recursive relation with itself, in order to be able to record the interdependence of a platform.

ATTRIBUTES

- *ID_hardware:** [NUM, 10]
- *make :** name of the manufacturer of the hardware [CHAR, 100]
- *description:** further description of the various components (for example: server, PC, monitor, etc. [CHAR, 250])
- *type number:** further indication of the hardware (such as that indicated by the manufacturer) [CHAR, 80]
- version number :** [CHAR, 20]
- *start date_use :** date on which hardware was taken into use
[date field, YYYY/MM/DD] system date, not amendable
- end date_use:** date on which hardware was taken out of use
[date field, YYYY/MM/DD], system date, not amendable

Application

Application or application software necessary to be able to display the archival records (for example an XML browser, Acrobat reader for PDF files, or RDBMS for database files). It is essential to record the history of the successive versions. Also refers to previous versions that are no longer in use.

ATTRIBUTES

- ID_application:** [NUM, 10]
- *name_application_software :** description of the application software with which the computer files can be read and the contents presented. [CHAR, 120]
- *type indication :** any further indication with regard to application software [CHAR, 80]
- version number :** [CHAR, 10]
- *description_functionality :** short description of the most important functions of the application software. This also includes a reference to a user's guide. [CHAR, 400]
- *start date_use :** date on which this version of the application software was taken into use [date field, YYYY/MM/DD] system date, not amendable.
- end date_use :** date on which this version was taken out of use [date field, YYYY/MM/DD] system date, not amendable
- *ID_control_programme:** [NUM, 10]

Archive Manager

The person responsible for the activities carried out in the management of digital archival records. There are a limited number of personnel with different authorisations in respect of functions in the system.

ATTRIBUTES

***ID_archive_manager:** [NUM, 10]
***name_person:** [CHAR, 100]
***name_position:** [CHAR, 100]
***in_position:** [date field, YYYY/MM/DD]
out_position: [date field, YYYY/MM/DD]

Archival Record

An Archival record is the smallest logical coherent unit in an archive (block) – compare with Dossier.

The Archival record is decisive for the relationship between the components that have been stored in Depot 2000. As a rule, this relates to one or more computer files, plus the corresponding metadata.

Definitions according to the Public Records Act:

- Records, regardless of their form, received or drawn up by the government bodies, and, by virtue of their nature, intended to be held there under these;
- Records, regardless of their form, with a similar purpose, received or drawn up by institutes or persons, whose rights or functions have been passed to any government body;
- Records, regardless of their form, which, in accordance with agreements with, or orders from, institutions or persons, or for other reasons, have been included in an archives' repository, to be held there;
- Reproductions, regardless of their form, which, by or pursuant to the law, replace the archival records as referred to in the above-mentioned three points, or which have been produced in accordance with the provisions of Article 7 (of the "Public Records Act 1995").

ATTRIBUTES

***ID_archival_record:** [NUM, 10]
***subject :** the subject with which the Archival record is concerned.
[CHAR, 120]
***formal_person_responsible:** the authority in whose name the archival record has been drawn up
This authority is the person who is formally responsible. It is the title of the position (at the level of the signatory).
[CHAR, 40]
***finalisation date:** The date on which the Archival record was finalised.
[date field: YYYY/MM/DD]

- *Accessibility restriction:** only yes or no
reference to clause (code_accessibility)
[CHAR, 1 (only Y/N permitted) and CHAR, 20
(code_accessibility)]
- date_end_accessibility_restriction:** date on which the accessibility restriction
expires [date-field: YYYY/MM/DD]
- registration attribute:** (number and/or date)
[CHAR, 20 and date field: YYYY/MM/DD]
- *ID-dossier:** [NUM, 10]
- *ID_acquisition:** [NUM, 10]
- *ID_form:** [NUM, 10]
- *ID_structure:** [NUM, 10]

Archive Package (AIP)

The relationship between Archival record (with corresponding intellectual meta-data) and the corresponding Computer files (with corresponding technical meta-data).

- *ID_archival_record:** [NUM, 10]
- *ID_computer_file:** [NUM, 10]

Authentication

The method and key as used for the purposes of authentication.
Authentication is the process of sealing: certifying that something is what it is by means of watermarking, digital or electronic signature and/or timestamping.

ATTRIBUTES

- *ID_Authentication:**[NUM, 10]
- *method :** Description of the authentication method, such as watermarking or a type of digital signature. [CHAR, 250]
- *start date_use:** date on which system software was taken into use [date field YYYY/MM/DD]; it is also possible for this to be a period of just one year.
- *end date_use:** date on which system software was taken out of use [date field, YYYY/MM/DD]; it is also possible for this to be a period of just one year
- *key :** The key that was actually used to write the digital signature, for example. [CHAR/NUM ?, 40]

Management Regime

The total of requirements, procedures and agreements with which the system and the archival records contained in it must comply.

ATTRIBUTES

- *ID_management_regime:** [NUM, 10]
- *description:** general description of the management regime that applies within this system. [CHAR, 250]
- *aim:** detailed description of the aim of the management [CHAR, 250]
- *responsible officer:** name of the officer who is responsible for the management regime [CHAR, 100]
- *begin_valid :** start date of validity management regime as a whole [date field, YYYY/MM/DD] system date, not amendable after it has been saved.
- end_valid:** end date of validity management regime as a whole [date field, YYYY/MM/DD] system date, not amendable after it has been saved

System Software

The description of the system software under which the Depot 2000 computer platform functions (and has functioned)

ATTRIBUTES

- *ID_system_software:** [NUM, 10]
- *name:** description [CHAR, 100]
- *type:** detailed indication of the system software [CHAR, 100]
- version number:** version number [CHAR, 20]
- *start_date_use:** date on which system software was taken into use [date field YYYY/MM/DD].
- end date_use:** date on which system software was taken out of use [date field, YYYY/MM/DD].
- *ID_computer_platform:** [NUM, 10]

Computer File(s) Data

Data about the computer file managed.

ATTRIBUTES

- *ID-computer file:** [NUM, 10]
- *file name:** Name of the Computer file, including any extension. [CHAR, 40]
- *Size :** in Megabytes [NUM, 10]
- *Storage date/time:** time at and date on which file was stored (created) [date field, YYYY/MM/DD and time (NUM, 8)]
- *storage format and version number:** description of the Storage format (the technical lay-out) of the file.
Examples: ASCII, Word, PDF, XML, RTF, TIFF
[CHAR, 15] with reference table of permissible values.

applied compression method: optional, indication of manner in which the file has been compressed, and how it can be decompressed again. [CHAR, 80]

ID_authentication: [NUM, 10]

***ID_storage_medium:** [NUM, 10]

***ID_activity:** [NUM, 10]

ID_application: [NUM, 10]

Conversion Software

Specific software with which a conversion can be carried out from a source file format into a target file format. This might be a standard or custom-made application.

A conversion such as this will be carried out if the file format used will no longer be supported (eventually), or is not in accordance with the format required. This will be determined via the Management regime.

ATTRIBUTES

***ID_conversion_programme:** [NUM, 10]

***name_conversion_programme:** name of the conversion software [CHAR, 100]

***Description:** detailed description of target and operation of the conversion programme, possibly with reference to the user's guide. [CHAR, 400]

file type_source: indication of type of format or source file which is to be converted, [CHAR, 40]

file type_target: indication of type of format or target file to which a file has been, or will be, converted, [CHAR, 40]

version number: any further indication of the conversion software [CHAR, 20]
optional

***start date_use:** date on which conversion software was taken into use [date field, YYYY/MM/DD], system date, not amendable after it has been saved

end date_use: date on which conversion software was taken out of use [date field, YYYY/MM/DD], system date, not amendable after it has been saved; if only used once, this field can be left empty.

***ID_activity:** [NUM, 10]

***ID_control_programme:** [NUM, 10]

Dossier

A dossier describes the logical collection to which an Archival record belongs. It has been determined that an Archival record may only form part of 1 dossier. This does not alter the fact that the document concerned may occur in another dossier in another role.

ATTRIBUTES

- *ID_dossier:** [NUM, 10]
- *title :** the description of the dossier [CHAR, 240]
- *period:** the period to which the dossier refers. It is sufficient to note the number of years here.
The start year is equal to the finalisation date of the oldest Archival record.
The end year is equal to the finalisation date of the most recent Archival record. [CHAR, 15]
- *classification attributes:** classification code (for example, basic code ANM: Association of Netherlands Municipalities [Vereniging van Nederlandse Gemeenten]) or another dossier attribute [CHAR, 20]
- *ID_origin:** [NUM, 10]

Requirements

Description of the requirements which apply within Depot 2000. These will be adjusted periodically. However, it is necessary to retain the history of the requirements, in order to be able to adequately accountable. Requirements may be both procedures and concrete requirements (such as the requirement XML for files, or to refresh the medium every year).

ATTRIBUTES

- *ID_requirement:** [NUM, 10]
- *description requirement:** detailed description of the applicable requirements [CHAR, 500]
- *type-requirement:** specific of the type of requirements which are described (for example: technical, intellectual, administrative, authenticity). [CHAR, 80], checked by reference table
- *begin_valid:** per type of requirement, start date of validity [date field, YYYY/MM/DD] system date, not amendable after it has been saved
- end_valid:** per type and date of validity [date field, YYYY/MM/DD] system date, not amendable after it has been saved
- *ID_management_regime:** [NUM, 10]

Origin

The archive former is a government institution, a legal entity other than the government, or a natural person in whose company processes/the company processes of which the Archival records have played a role.

ATTRIBUTES

- *ID_origin:** [NUM, 10]
- *name_archive_former:** name of archive-forming institution, organisation or person [definition according to PIVOT: is a legal construct which is authorised to act on the grounds of attribution or dele-

gation, and which is responsible for the organisation of that act. Besides being a construct, a body can also practically be the party who independently performs the act. In practice, the body may grant an organisation the power by mandate, to perform the act. In the latter case, the body remains responsible for the performance of the act by the organisation.] [CHAR, 250]

***task:** short description of the task/function to which the company process belongs; [CHAR, 120]

***company process:** short description of the company process which is carried out by the archive former, and by which the archival records are formed. [CHAR, 120]

Original Hardware

The hardware on which the application software functioned at the time of the creation (and management??) of the Computer file.

This entity has a relationship with itself, in order to be able to indicate the interdependence of the hardware described, forming part of a platform.

ATTRIBUTES

***ID_O_hardware:**[NUM, 10]

***make :** name of the manufacturer of the hardware [CHAR, 100]

***description:** further description of the various components (for example: server, PC, monitor etc.) [CHAR, 250]

***type number:** further indication of the hardware (such as that indicated by the manufacturer) [CHAR, 80]

version number: [CHAR, 20]

***start date_use:** date on which the hardware was taken into use [date field, YYYY/MM/DD] system date, not amendable

***end date_use:** date on which hardware was taken out of use [date field, YYYY/MM/DD], system date, not amendable

Original Application

Application software which was functioning at the time of the creation of the Computer file, and with which the file was (originally) made.

ATTRIBUTES

***ID_O_application:** [NUM, 10]

***name:** description of the application software with which computer files can be read and their contents presented. [CHAR, 120]

type: any further indication in respect of application software [CHAR, 80]

***version number:** [CHAR, 10]

***description_functionality:** short description of the most important functions of the application software. This also includes a reference to a user's guide. [CHAR, 400]

- *start_date_use:** date on which this version of the application software was taken into use [date field, YYYY/MM/DD] system date, not amendable.
- *end_date_use:** date on which this version was taken out of use [date field, YYYY/MM/DD] system date, not amendable
- *ID_O_control_programme:** [NUM, 10]

Original System Software

The description of the system software, including the computer platform functioning at the time of the creation of the Computer file.

ATTRIBUTES

- *ID_O_system_software:** [NUM, 10]
- *name:** description of the original system software used [CHAR, 100]
- *type:** further indication of the system software [CHAR, 100]
- *version_number:** version number [CHAR, 20]
- *start_date_use:** date on which system software was taken into use [date field YYYY/MM/DD]; may also refer to a period of just one year.
- *end_date_use:** date on which system software was taken out of use [date field, YYYY/MM/DD]; may also refer to a period of just one year
- *ID_O_computer_platform:** [NUM, 10]

Accessibility

Data about an accessibility restriction, being a clause with conditions.

ATTRIBUTES

- *ID_accessibility:** [NUM, 10]
- *description:** description of accessibility clause [CHAR, 300]
- code_accessibility:**[CHAR, 20]

Storage Medium

Data about the physical media available for the storage of Computer files.

ATTRIBUTES

- *ID_storage_medium:** [NUM, 10]
- *type :** for example: disk, mass storage device, CD-jukebox, magnetic disk, CD-ROM, WORM. [CHAR, 20]
- *capacity:** specification of the capacity available in the storage medium, indicated in Megabytes. [NUM, 10]
- make:** name of the supplier/manufacturer [CHAR, 100]
- type_number:** specification of the type of storage medium [CHAR, 40]
- serial_number:** number of the storage medium [CHAR, 40]
- *start_date_use:** date on which the medium was taken into use [date field, YYYY/MM/DD] system date, not amendable after storage

end_date_use: date on which the storage medium was taken out of use
[date field, YYYY/MM/DD] system date, not amendable after
storage
***ID_hardware:** [NUM, 10]

Relationship between computer files 1:

optional, refers to relationship between concurrent computer files which together include an archival record.

ID-computer file [NUM, 10] repeatable

Relationship between computer files 2:

optional, refers to relationship between a computer file that has replaced another computer file (for example: as a result of conversion). Although files themselves will be deleted, the data relating to them should be saved.

ID-computer file [NUM, 10] repeatable

Relation entity Archival record/O_application

***ID_archival_record** [NUM, 10]

***ID_O_application** [NUM,10]

Relationship entity Archival record/Activity

***ID_archival_record** [NUM, 10]

***ID_activity** [NUM, 10]

Relationship entity Activity/Computer file

***ID_activity** [NUM, 10]

***ID_computer_file** [NUM, 10]

Structure

Description of the structure of the Archival record, including page layout, paragraph layout, division into chapters titles etc. This occurs in XML, by means of a DTD or a Scheme, which is itself a computer file.

Although this is not immediately necessary for PDF files, given the fact that archival records are then, as it were, imaged (printed) and frozen in PDF, it is necessary to make a description of the structure of such archival records as soon as these were to be converted (if possible) to XML, for example.

A DTD/Scheme may relate to more than one archival record.

ATTRIBUTES

***ID_structure:** [NUM, 10]

***description:** detailed description of the DTD or Scheme [CHAR, 120]

Form

Description of the logical or outer occurrence of archival records. This includes the letter types used, type size, bold, underlined, italics, use of colour, use of

upper and lower case, etc. In the case of XML files, this can be recorded in XMS (style sheet).

In the case of archival records in PDF files, it is not immediately necessary to record this separately, provided that the requirements made of PDF files (see settings) have been complied with. If PDF files are being converted to XML, for example, a style sheet is necessary.

A style sheet may relate to more than one archival record.

ATTRIBUTES

***ID_form:** [NUM, 10]

***description:** further description of the style sheet [CHAR, 120]

Caretaker

Public Records Act: The person who is, by or pursuant to the law, responsible for the care of the Archival records.

The official who is finally responsible for the Acquisition, before transfer.

For example: The Minister of Finance is the Caretaker, and the Inland Revenue [de Belastingdienst] is, for example, an Archive former.

ATTRIBUTES

***ID_caretaker:** [NUM, 10]

***name_caretaker:** name of the organisation [CHAR, 250]

***contact_person:** name of the person with whom agreements are made, and transfers arranged [CHAR, 120]

ATTACHMENT A TERMS AND ABBREVIATIONS

This chapter describes the most important definitions and abbreviations of terms which play a role in this design.

ABS/Archeion

ABS/Archeion is the current archive management system being used by the State Archives' Service and other institutions. The system fulfils the functions of archive index/catalogue administration, lending administration, and management administration.

Access

A tool which describes the origin of and the relationship between archival records, and which also serves to retrieve archival records. There are a great variety of accesses in existence, such as archive overviews, inventories, indexes, etc.

Archive Management

All those activities focused on the acquisition, storage, management and accessibility of (authentic) archival records

Archive Store

A public archive, equipped, by or pursuant to the Public Records Act 1995, for the permanent storage of Archival records

Authenticity

Authenticity is the representation of a document, completely and entirely in accordance with the original registration and the function that it was intended to fulfil

Configuration Management

All those activities focused on the registration, management and accessibility of the IT components and the relation between them, forming part of the computer platform on which Depot 2000 runs.

Context

Synonym of origin, q.v.

Declaration of Transfer (= Act of Transfer)

Declaration as referred to in Article 9, Paragraph 3 of the Public Records Order 1995, by means of which the transfer of the archival records from the caretaker to the manager of the archives' repository is formally finalised.

DTD

Abbreviation of document type definition: a description of the structure of types of document in XML; it defines how the so-called markup-tags should be understood by the programme which presents such a document.

Font

The design of a collection of characters. A font is the combination of typeface and other attributes, such as size, pitch, and spacing.

Metadata

Data about other data.

Migration

Migration includes the transfer of the managed computer files from the present to a new platform (retaining the integrity, authenticity, etc. of the digital archival records).

PDF

The Portable Document Format is an industrial standard, introduced to the market by Adobe, and suitable for the storage and distribution of documents. In the PDF-format, in addition to the content of the document, the layout is retained in such a way that the form of the document is identical when it is printed out via a printer or a monitor.

SGML

The Standardised General Mark-up Language is an ISO 8879 standard supporting the electronic processing, storage and delivery of text-orientated information. SGML focuses on the description of the structure instead of the form, and is medium-independent. SGML forms the basis for the XML and HTML standards.

Structure

The structure of a document is understood to mean the logical construction of that document. In the XML format, this structure is described with the aid of a DTD. Distinguishable elements are, for example: address, subject, contents, signatory.

Style Sheet

A style sheet defines the layout of a document, particularly parameters such as the size of the page, the margins and the fonts.

Transfer

Procedure by which the caretaker transfers archival records that are eligible for permanent storage, and older than 20 years, to an archives' repository (Public Records Act 1995, Article 12).

XML

Extensible Mark-up Language

Standard for the definition of the structure of a document, designed for the exchange, storage and re-use of data.

XML is derived from SGML and, as such, focused on the independency of the storage and transport medium. The XML format is self-documenting.

Translations of figures 1, 2 and 3

Figure 1 Temporary Situation after Implementation of Depot 2000

Vraag	- query
Papieren archiefbescheiden	- paper archival records

Figure 2 Desired Future Situation

Interface zoekstelsel	- interface search system
Handelingenbank	- operations bank
Papieren archiefbescheiden	- paper archival records

Figure 3 Overview of the Depot 2000 system, Intended for the management of Digital Archival Records

Processen	- processes
Technisch onderhoud	- technical maintenance
Overdrachtproces	- transfer procedure
Zorgdrager	- caretaker
Gebruiker	- user
Opnameproces	- registration process
Opslag	- storage
Intellectueel beheer	- intellectual management
Zoekstelsel	- search system
Beheer en controle	- management and control
Archiefbeheerder	- archive manager

ATTACHMENT B PDF SETTINGS

Settings instructions, on the basis of Acrobat Distiller v4.0:

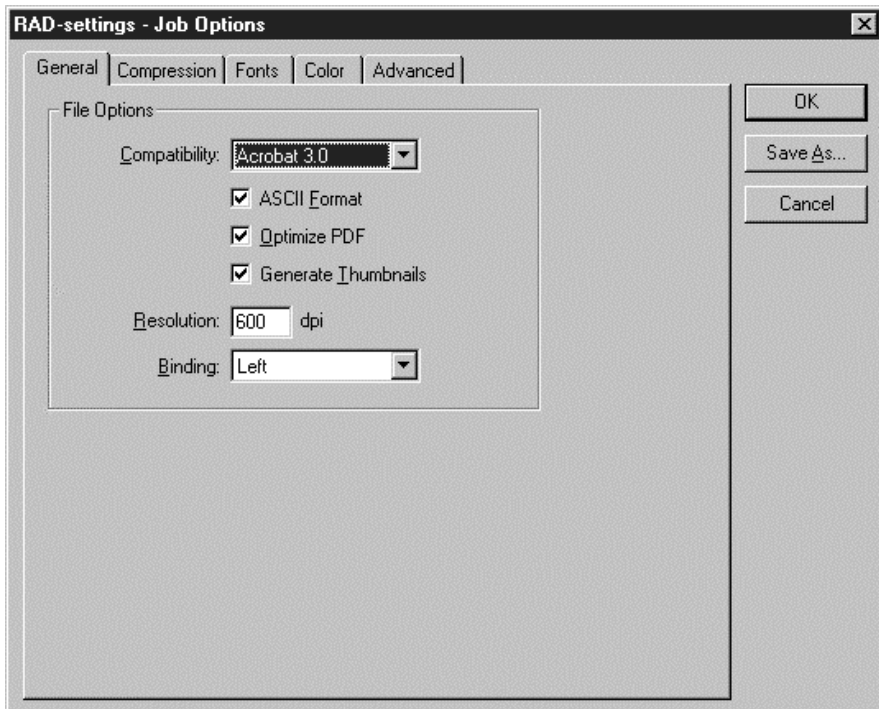


Figure 5 Acrobat Distiller Settings: General

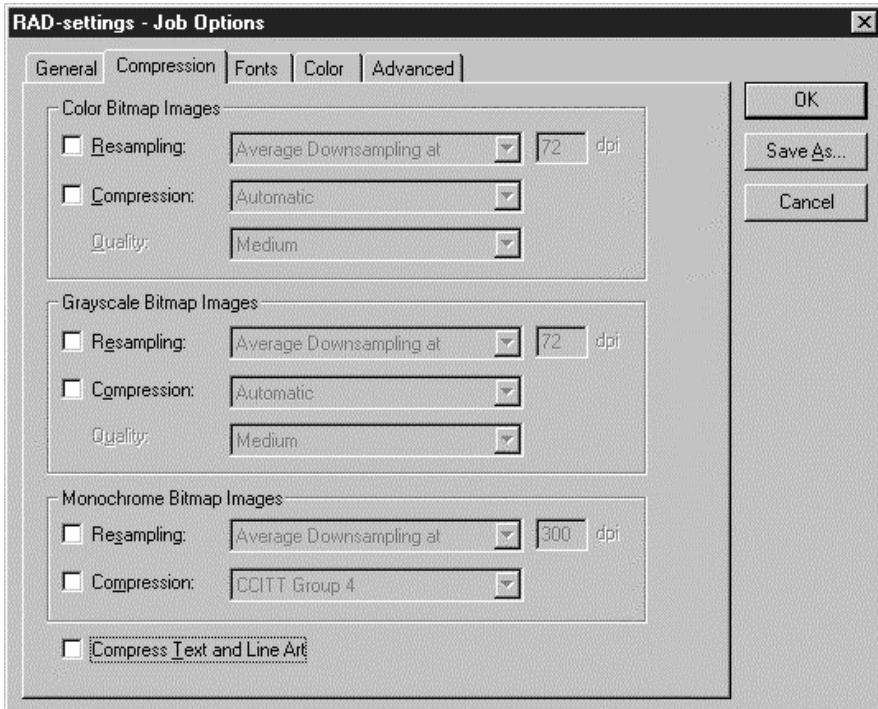


Figure 6 Acrobat Distiller Settings: Compression

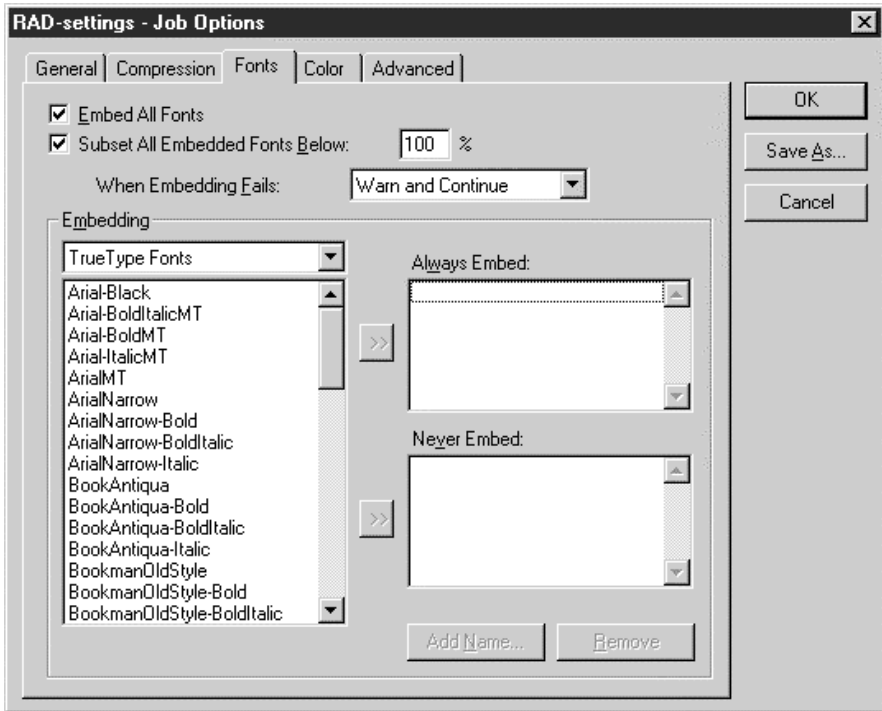


Figure 7 Acrobat Distiller Settings: Fonts

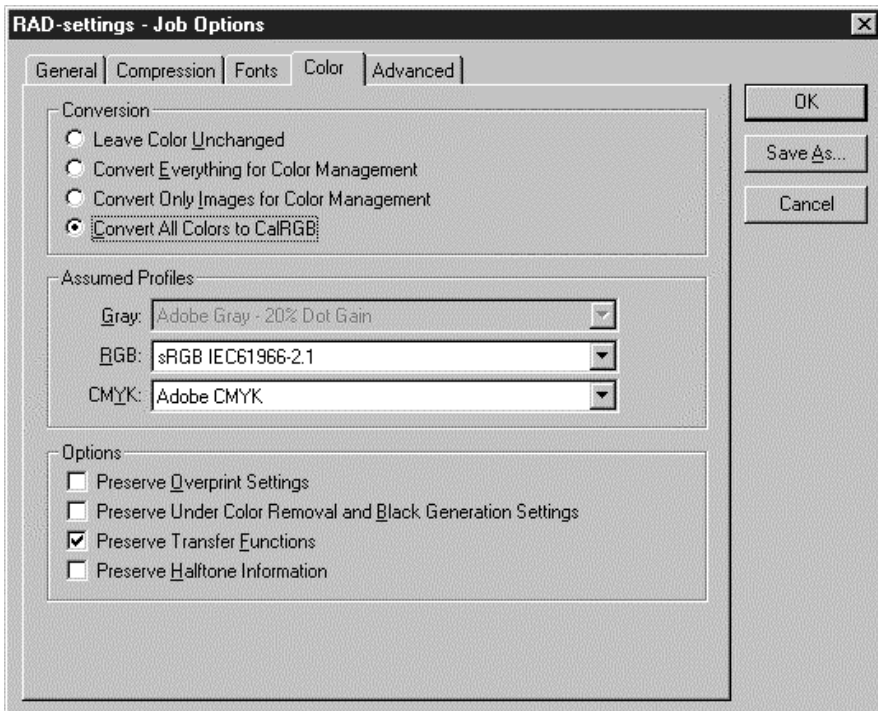


Figure 8 Acrobat Distiller Settings: Colour

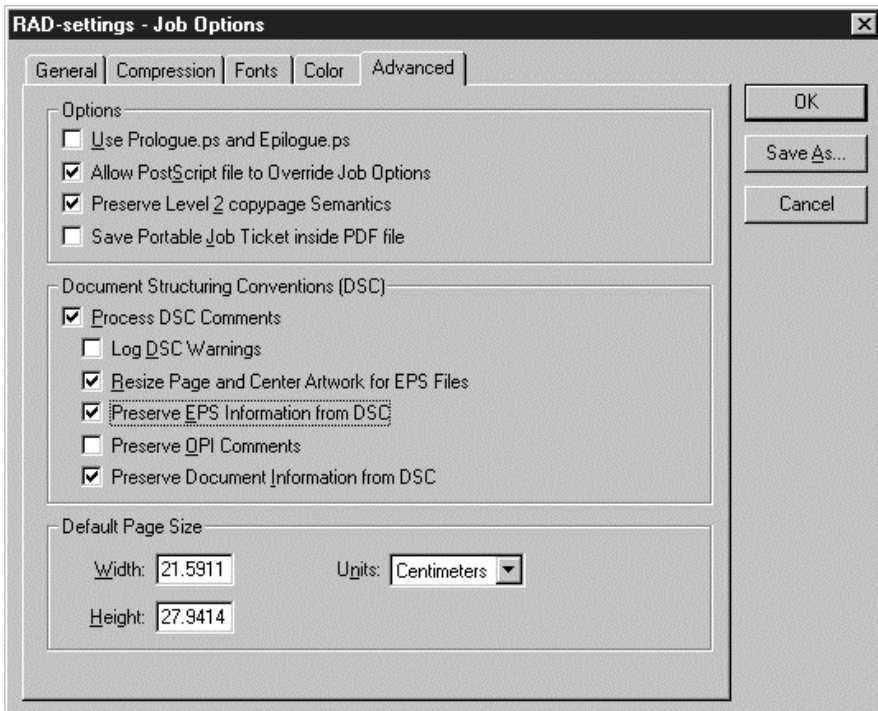


Figure 9 Acrobat Distiller Settings: Advanced

Settings instructions on the basis of Acrobat v4.0:

- File-menu
 - Save As...
 - Optimise √
 - Security Standard
 - Specify Password To nothing filled in
 - Do Not Allow
 - Printing nothing ticked
 - Changing the Document √
 - Selecting Text and Graphics nothing ticked
 - Adding or Changing Annotations and Form Fields √
 - Sign and save as Figure 9
 - Document Info
 - General
 - Title <fill in>
 - Subject <fill in>
 - Author <fill in>
 - Binding Left Edge
 - Open
 - Initial View thumbnails and Page
 - Page Number 1
 - Magnification Default
 - Page Layout Default
 - Window Options nothing ticked
 - User Interface Options nothing ticked
 - Fonts n/a
 - Security n/a
 - Prepress n/a
 - Index n/a
 - Base URL n/a

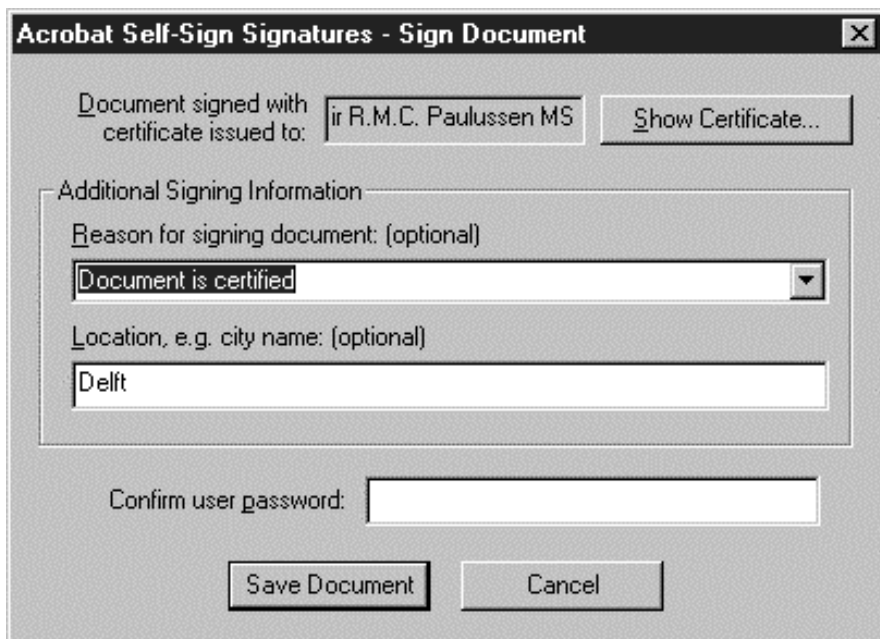


Figure 10 Settings for Digital Signature