

FUNCTIONAL REQUIREMENTS FOR ELECTRONIC RECORDS MANAGEMENT AND ARCHIVING: THE DOMEA-CONCEPT IN GERMANY

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This paper seeks to present the concept for the disposal and archiving of electronic records of the Federal Archives of Germany. The concept is part of the DOMEA-Concept, which stands for Document Management and Electronic Archiving in IT-supported business processes, a broad-scale German government information management requirement. The paper describes the scope of the current electronic archives and presents the main topics of the general DOMEA-concept and the new disposal concept.

ELECTRONIC ARCHIVES IN THE FEDERAL ARCHIVES

The Federal Archives is the national archive of Germany.¹ It brings together and preserves the records of central government and the courts of law, and makes them available to all who wish to consult them. The records span an unbroken period from the early 19th century to the present day.

Today the Federal Archives advises government departments on best practice in records management and selects the records which will be kept in perpetuity. These documents are generally opened for public inspection thirty years after the file was closed.

In recent years also collections of electronic records were accessioned and the volume of such accessions will increase markedly in future years. Today the digital holdings contain about 200 Gigabyte of data. Assuming that archives want to make their collections available for use now or in the future, it is one of the most important tasks to ensure that those collections can be used and are in a fit state to be used. Creating a sustainable and reliable digital repository is not only driven by the need of historical research in the future, but also by a need inherent to democratic societies: i.e. holding the government to account for its conduct.

The establishment of a specialised division caring for the preservation of machine-readable records within the Federal Archives owed much to the collapse of the former DDR and the reunification of the two Germanys. In the former DDR governmental machine-readable data was normally processed by centralised State-owned (or State-sponsored) data-processing centres running large mainframe computer operations. Following formal unification in October 1990, East German government agencies and institutions that were not taken over by federal agencies or by one of

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¹ For more information see <http://www.bundesarchiv.de>.

the newly established Länder were either privatised or dissolved. As a result, many of the State data-processing centres were shut down, and in the dismantling process, data holdings were often systematically destroyed or relocated to new private companies. In order to attempt to secure as much information as possible, the Federal Archives needed to respond quickly. Firstly, the Federal Archives Act was amended in 1990 in order to provide the legal authority for the transfer of former DDR records to the Federal Archives. Secondly, a specialised section for electronic records was established in the Federal Archives in August 1991.

Above all, it was important not only to acquire data, but also to secure documentary information that allowed this data to be read and interpreted. Particular success was gained in the acquisition of the "Datenspeicher gesellschaftliches Arbeitsvermögen", a collection of data files that contain the individual-level information for a high percentage of the former DDR workforce, including details on education, training and employment. The entire data collection contains information on about 7,25 million individuals and extends to some 1,5 Gigabytes of data. Computerised databases covering the general areas of statistics, economics, agriculture, education, penal registration, and labour have all been preserved.

The capture and interpretation of data from the databases recovered from the former DDR provide an interesting case-study of what might be called 'digital archaeology' and the very difficult reconstruction of data and documentation allowed to gain many experiences so that today, the importance of a well managed data transfer is obvious.

Besides the east-German data, the digital repository contains recent statistics on the labour market situation, some military databases, geological information systems, a few records from document management systems and even personal papers in a digital form.

The experience with the digital archaeology showed very clearly the need for a standardized disposal procedure - otherwise it will not be possible to manage a far more important digital repository in the future. At present for example nine different document and workflow management systems are or will be in use in German federal agencies. Another problem is that digital objects unlike paper records cannot be left in an obsolete format and then turned over to a digital repository after a long period of neglect (i.e. a retention period of 30 years). This challenge is as much a social and institutional one, as it is a technical one because for long-term preservation we rely on institutions that go through changes in purposes, politics, managing and funding.

Without standardisation of technical and organisational procedures there is no chance in managing the disposal and archiving with the available resources. Fortunately the Federal Archives got the chance that to integrate its efforts at setting standards in the most important German e-government strategy, DOMEA.

THE DOMEA CONCEPT

DOMEA, which stands for Document Management and Electronic Archiving in IT-supported business processes, is a broad-scale German government information management requirement. The program, also known as "Konzept Papierarmes Büro" (the paperless office concept), was instituted in 1996 by the Federal Government Co-

ordination and Advisory Agency for IT in the Federal Administration (KBSt)² to assist government agencies in selecting suitable solutions or suppliers of content management, business process management and records management.³

The DOMEA concept consists of three parts: the organisational concept which describes the procedures of records and business process management in an electronic environment, the requirements specification with about 250 requirements for electronic records and business process management systems and the certification for IT suppliers who wish their products to be evaluated against the requirements. The concept forms a baseline which sets out the minimum necessary for a reliable electronic records management system. Each administration wishing to make use of these requirements will always need to consider its own specific business needs and context. The generic requirements must be tailored by adding special needs and selecting from alternative requirements according to corporate policy and practice. The concept describes the whole business process starting from the incoming letter, email or report, through its processing to its disposal.

The DOMEA concept establishes the core requirements for an electronic records management system in public administrations.⁴ These systems have to comply with various regulations which are imposed by laws, standing orders, regulations and instructions. These prescriptions are firstly the completeness, integrity and authenticity of official records. That is to say that official documents cannot be subsequently altered, changed, removed, destroyed or deleted. Secondly the systems have to realise the records principle of public administration, which means that documents have to be appropriately kept together in systematically arranged subject files according to the functions of a particular office. Thirdly the systems have to comply with the accountability and lawfulness of administrative procedures, which means that accountability and responsibilities have to be documented in the records in the course of business and that the state of affairs and the development of transactions in a given case have to be fully evident in the records at any time. The DOMEA-concept shows how to securely manage records throughout a controlled lifecycle in compliance with relevant regulatory requirements.

2 *The Federal Government Co-ordination and Advisory Agency for IT in the Federal Administration (KBSt) was founded in 1968. Located within the Federal Ministry of the Interior, the KBSt is an inter-ministerial agency of the Federal Government intended to ensure that the federal administration optimizes its use of information technology for specific fields and in organizational, economic and technical terms. The Federal Government's goals for IT use are to link IT strategically with other administrative areas such as management and organization, to ensure that this complex technology remains controllable and manageable in the future, and to combine IT resources using new organizational approaches and the most comprehensive and uniform IT standards possible.*

To perform its mission, the KBST develops framework rules for the use of IT within the federal administration. Upon approval by the ministries in the Inter-ministerial Co-ordination Committee for Information Technology in the Federal Administration (IMKA), the KBSt publishes such rules as general recommendations.

3 *Koordinierungs- und Beratungsstelle der Bundesregierung für Informationstechnik in der Bundesverwaltung (KBSt). DOMEA. Aufbau eines Pilotsystems für Dokumentenmanagement und elektronische Archivierung im IT-gestützten Geschäftsgang. Teil 1: Organisationskonzept. Teil 2: Leistungsverzeichnis der Ausschreibung, Bonn 1997 (Schriftenreihe der KBSt, 34; <http://www.kbst.bund.de/papers/sr/34/>); Koordinierungs- und Beratungsstelle der Bundesregierung für Informationstechnik in der Bundesverwaltung (KBSt). Abschlußbericht zum Projekt DOMEA®. Dokumentenmanagement und elektronische Archivierung im IT-gestützten Geschäftsgang. Köln: Bundesanzeiger 1999 (Schriftenreihe der KBSt, 41).*

4 *For the description of the first DOMEA-project see Andreas Engel/Michael Wettengel, From project to practice, the DOMEA-project in Germany, in: ARMA July/August 2003, Vol. 37, No. 4, p. 49-56.*

Since 1996 DOMEA has become the most important guideline for the implementation for electronic records and IT-support of business processes. The rapid technological development and a lot of new practical experience lead the KBSt to relaunch the concept. In September 2003 the draft of the revised concept was published on the website of the KBSt,⁵ where it could be discussed and commented by the interested public. The final version was published in January 2005.⁶ The new concept is not only concentrated on the federal administration anymore, but integrates the requirements of the regional and local administrations.

Already the first DOMEA-concept dealt with the questions of disposal and archiving of electronic records. The recommendation for the disposal and archiving of electronic records in federal agencies was published in September 1998.⁷

The concept establishes a very detailed procedure for the disposal and archiving of electronic records. This procedure has never been realised in practice. This is above all due to the fact that electronic records and business process management systems have only been recently implemented in the agencies or are still in the phase of introduction. Even if agencies are already working completely electronically, the retention periods haven't expired yet, whereas the concept provided for a significantly shorter period of implementation.

THE NEW CONCEPT FOR THE DISPOSAL AND ARCHIVING OF ELECTRONIC RECORDS

In January 2004 the KBSt invited the Federal Archives to set up a new project group to work on a revision of the concept. Under the direction of the Federal Archives and the assistance of the KBSt a group of archivists of federal, regional and local archives and consultants had the ambitious task to define a standardized disposal procedure including a set of metadata for the disposal and archiving of electronic records.⁸ The aim was to find a suitable and efficient procedure for the disposal of electronic records created and maintained in office systems. This procedure should facilitate appraisal in an electronic environment and enable public agencies to meet their obligation to transfer non current electronic records to the Federal Archives. The new concept describes all phases of the lifecycle through which documents typically pass, including creation, authoring, approval, release, and ultimately revision or retirement and archiving. It defines the procedures which have to be implemented to make sure that the disposal can be managed as automatically as possible. As opposed to the first concept it should be applicable to every level of public administration according to the larger public of the new DOMEA-concept. In September 2004 the working group presented its draft to the "Archivreferentenkonferenz", the conference of the heads of the state and the federal archives, which gave their approval. It was published in January 2005 on the website of the KBSt together with the DOMEA-concept and several other special guidelines (data protection, electronic signatures, communication).

5 http://www.kbst.bund.de/Anlage304093/pdf_datei.pdf.

6 <http://www.kbst.bund.de>

7 *Koordinierungs- und Beratungsstelle der Bundesregierung für Informationstechnik in der Bundesverwaltung (KBSt). Konzept zur Aussonderung elektronischer Akten. Teil 1: Empfehlung des Bundesarchivs zur Aussonderung elektronischer Akten. Teil 2: Erfahrungen zum Aufbau und zur Ablage elektronischer Akten im DOMEA®-Projekt, Bonn 1998 (Schriftenreihe der KBSt, 40).*

8 The new concept is available on the KBSt web site <http://www.kbst.bund.de>.

The new concept focuses on three main conditions for a successful disposal: Firstly, the archival appraisal should take place in the agency to reduce the amount of data being transferred to the archival institution as much as possible. The concept defines the procedures and metadata which have to be implemented to make sure that the disposal can be managed as automatically as possible. A two-stage disposal procedure is recommended. In an initial stage, the archival institution delivers a disposal schedule. The disposal schedule establishes a timetable for the life cycle of the records as provided for by legislation, regulation, or administrative procedure and provides authorization for their disposal on the basis of the filing plan of the transferring agency. The schedule is implemented in the electronic records management system of the agency. For an automatic selection of records, the metadata of documents, folders and files have to contain a data field „disposal instruction“ which can either receive the entry „to be deleted“, „to be appraised“ or „of archival value“. The information should be registered at the file level and to be inherited downwards to all folders and documents created subsequently under the particular file.⁹ On the basis of this information, in the second stage the agency automatically selects those files whose retention period have expired and which are of archival value or have to be appraised and transfers them to the archival institution.

The effectiveness of this two-stage procedure depends on the quality of the disposal schedule. Therefore the concept recommends that the archival institution should have a limited access to the records management system of the agency in order to review and update continuously the disposal schedule.

Secondly, the new concept defines a new metadata, a time limit for the conversion to make sure that the conversion into an archival format takes place directly after a file is closed, at the beginning of the retention period and not only at the moment of the transfer to avoid that formats get obsolete when the retention periods are long. Given the current length of retention periods of 30 years and more this provision is absolutely necessary to prevent a loss of data.

Thirdly, the new concept does not only describe the procedures, it shall also offer a practical solution to transfer the principles into the practice. A set of metadata was defined which can be transferred into an XML schema and implemented by the IT suppliers in the electronic records management systems. This will be part of the requirements of the new DOMEA certification in 2005. The aim is to standardise and in consequence fasten the disposal procedures by making the electronic records management systems of the public administration to interoperate with the archival management systems. This set of metadata has to meet on the one hand the different corporate policies and practices on the federal, regional and local level. On the other hand it has to be sufficiently detailed and concrete to meet the needs of the IT-suppliers. It stresses the importance of the audit trails which capture and store automatically all the actions that are taken upon an electronic record, the user initiating and carrying out the action and the date and time of the event and which have to be assigned to the records which are transferred to the archives. The basic schema will not prescribe the obligation level for every metadata element. These decisions

⁹ *The DOMEA-concept is based on a three-level object hierarchy for documents, folders and files. Files enter in a corporate information structure, in German administrative tradition the filing plan. On every level, metadata are defined. Their application follows the principle and functionality of inheritance from the higher object to the lower. Filing a document into a folder or creating a new folder is analogous to associating it with the relevant part of the corporate information structure.*

will be made in the course of the adaption to the policies and practices on federal, regional and local level.

All these requirements will be part of the prospective evaluation. In the future a DOMEA-certificated records management system is supposed to comply with archival requirements. Being part of the large-scale DOMEA-Program allows the Federal Archives to get involved in the definition of standardised interfaces to facilitate the disposal procedure and to build up reliable and sustainable electronic archives.

ZUSAMMENFASSUNG

VORAUSSETZUNGEN FÜR EINE FUNKTIONSFÄHIGE VERWALTUNG UND DIE ARCHIVIERUNG ELEKTRONISCHER AKTEN

Dieser Beitrag versucht, das Konzept für eine Aufbereitung und Archivierung elektronischer Akten in den Staatsarchiven Deutschlands darzustellen. Es ist Bestandteil von DOMEA, der Schriftgutverwaltung und Archivierung elektronischer Akten entstanden durch informationstechnologische (IT) Geschäftsvorgänge, dem Erfordernis einer Verwaltung der umfangreichen Regierungsinformationen Deutschlands entsprechend. Das Referat beschreibt die Möglichkeiten der derzeitigen Archivierung elektronischer Akten und stellt die wichtigsten Themen von DOMEA beziehungsweise die Entwürfe zu deren Umsetzung vor.

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