



EUROPEAN FORUM OF OFFICIAL GAZETTES

5th meeting Madrid, 25th - 26th September, 2008

“Electronic Archiving”

Final report of the working group

Presented by
Monsieur Didier François
Directorate of the French Official Gazette

1. Introduction	3
2. Terms of Reference and Membership of the Working Group.....	4
2.1. Terms of reference	4
2.2. Membership.....	5
3. Meetings	6
4. Legal framework	7
5. Exigencies for electronic archiving	8
5.1. Identification	8
5.2. Integrity	10
5.3. Long term preservation	11
5.4. Accessibility	12
5.5. Specific exigencies for electronic archiving of Official Gazettes.....	13
6. Implementation.....	14
7. Conclusions	16
8. Projection.....	17
Appendix: Reference Documents.....	18

1.INTRODUCTION

Today, due to the increasing usage of the World Wide Web in particular in professional working environments, a clear tendency towards publication of legally binding electronic versions of Official Gazettes could be observed.

Implementation of electronic publishing of official documents requires among many other tasks implementation of reliable solutions for long term preservation.

The working group «Electronic archiving» has been created in order to discuss general questions and issues in relation with archiving of electronic versions of Official Gazettes.

We invite you to consult the OJ Forum web site (<http://circa.europa.eu/irc/opoce/ojf/info/data/prod/html/index.htm>), where you can find a selection of relevant legal and technical documents as well as the complete set of presentations, working documents and meeting minutes of the working group.

2. TERMS OF REFERENCE AND MEMBERSHIP OF THE WORKING GROUP

2.1. Terms of reference

The work of the working group has focused on the following topics:

- raise consciousness about common problems related to electronic archiving;
- promote exchange and sharing of experience;
- develop principles and recommendations regarding different aspects of electronic archiving in order to provide guidance for interested members of the forum.

In order to get a better understanding of the state-of-the-art of implementation of electronic archives for Official Gazettes and the related legal and technical issues, we developed a questionnaire which was shipped to all members of the Forum. The results have been analysed by the working group and have been presented at the 4th meeting of the Forum in Helsinki/Tallinn. They have been also published on the Website of the Forum.

2.2.Membership

Delegates of the following countries have participated in the meetings of the working groups respectively have been kept informed about the work:

Country	Level of participation
AUSTRIA	
BELGIUM	To be kept informed
ESTONIA	
FINLAND	
FRANCE	
GERMANY	To be kept informed
GREECE	
HUNGARY	To be kept informed
ITALY	
LITHUANIA	
PORTUGAL	
SLOVENIJA	
SPAIN	
SWEDEN	To be kept informed
EUROPEAN UNION	

The group has been chaired by Ms Joëlle Kauffmann (France); the secretary has been assured by Mr Peter Schmitz (Publications Office of the European Communities).

3.MEETINGS

The working group «Electronic archiving» exists since 4 years. During this period there had been 5 meetings of the working group:

Date	Participants
27/04/2005	France
16/10/2006	Estonia, Italy, France, European Union
15/05/2007	Estonia, Italy, Lithuania, Finland, France, European Union
9/11/2007	Estonia, Italy, Finland, France, European Union
4/04/2008	Germany, Italy, Portugal, France, European Union

After the 4th meeting of the Forum, there had been 2 meetings:

➤ **9th of November 2007, Paris**

- exchange of information
- discussion about the contents of the final report

➤ **4th of April 2008, Paris**

- exchange of experience
- presentations:

France: “Archiving at the French Official Gazette”

Italy: “Official Gazette of Italian Republic - Publication and archiving process”
- further discussion about the contents of the final report

4.LEGAL FRAMEWORK

Archiving due to legal reasons is directly related to the legal value assigned to the documents themselves. The document to be archived has to be legal binding by its creation. The main function of the archive should be to guarantee preservation of this legal value.

Three level of archiving have to be distinguished:

- production archives, i.e. conservation by the originating service;
- intermediate archives, i.e. temporary conservation for administrative and/or legal reasons;
- historical archives or public archives, i.e. preservation of all documents which concern the activity of the state and its sub entities, as well as public entities and public companies. Public archives cannot be disassociated from the actual context and have to remain accessible.

The only responsible for the management of the archive in a legal sense should be the state. In answers to our questionnaire, we observed that the daily operation of the archive is sometimes delegated to public entities, but control remains at the Government level.

During the analysis of the results of our questionnaire, we observed that for countries, which have already introduced a legal binding electronic version of their Official Gazette, there also exists a legal framework for electronic archiving. Technical constraints, which have to be met by the physical implementation of the archive, have been defined in different levels of details.

It could also be observed that legal binding electronic archiving is a topic, which concerns private companies and public administrations in general. Electronic archiving of Official Gazettes is a special case of the general concept.

If there is no dedicated legal framework for electronic archiving and in particular for electronic archiving of Official Gazettes, the common rules of archiving of the paper version have to be adapted accordingly to take into account the characteristics of electronic documents.

An example of archiving legislation could be found in the presentation of the publication and archiving process of the Official Gazette of the Italian Republic¹, pages 28 to 33.

¹ See appendix "Reference documents", reference 18)

5.EXIGENCIES FOR ELECTRONIC ARCHIVING

5.1.Identification

What information has to be archived?

First of all, the original electronic version of the Official Gazette has to be archived in order to preserve the image of the document as it had been published.

Related information to be archived could be:

- Consolidated legislation;
- Context information (production information, information about the legal process, etc.).

Which metadata should be created?

Metadata should enable easy identification of and easy access to archived documents. It should be created at latest when the documents are sent to the archive.

Metadata are important in different contexts:

- documentation of the bibliographical information related to the document (author, title, etc.);
- documentation of the technical reference data necessary to preserve the legal value of the document for example in context of future migrations (electronic signature, format, etc.);
- documentation of the information necessary to classify the documents in order to enable consultation. This metadata concerns information like origin of the document, creation date, etc.

Metadata must be organised in a standardized manner.

The answers to our questionnaire showed that there is awareness but not yet a clear tendency to adapt international standards for the representation of metadata. For bibliographical information, Dublin Core has been mentioned, for the description of archive contents, EAD, EAC and METS are relevant standards.

Which formats and which media should be used for electronic archiving?

The answers to our questionnaire showed that the most common format for electronic publishing of Official Gazettes and thus for archiving is PDF. In this context PDF/A, as an international standard, defined for long term preservation, is of special interest.

For the production systems, there is a clear tendency towards the usage of XML, which is also format based on an open standard. In case, where it has been decided to archive also production data, XML documents are well adapted solution. These documents are also interesting in the context of reuse of the archived information.

If the archive needs to be completed by historical documents, which don't yet exist in electronic format, the common method is to scan the paper version and in order to create images in TIFF format for archiving. TIFF is again an open standard. It could also be embedded in PDF files according to the PDF/A-1B standard.

5.2.Integrity

Integrity stands for the measures, which have been taken in order to guarantee the physical and logical persistence of the documents and to protect them against any alteration, modification or destruction. Modification of contents has to be excluded; any operation has to be documented.

In order to guarantee integrity of archived documents dedicated procedures and processes have to be defined and to be implemented. Regular internal and external audits have to be performed in order to supervise and to control all aspects of the archiving process.

Certification—is the common method to guarantee authenticity of legal documents.

For the French Official Gazette, two types of electronic signature are used (XAdES (XML Advanced Electronic Signatures) and PKCS (Public Key Cryptography Standards) for PDF documents).

In Italy, a digital stamp implemented as a bi dimensional graphic code containing digital sign, Official Gazette identification data and page number is added for every page.

Concerning the security of the archiving systems itself, the implementation of adequate security policies (firewalls, access control lists, etc.), in particular for systems with automatic data processing, could see as a legal obligation of the organisms in charge of the operation of the archive.

Security has to be implemented on different levels:

- preventive
- reactive
- curative.

5.3.Long term preservation

Long term preservation means to guarantee persistence of the documents over the time, which is very sensible in the context of electronic archiving of legal information.

Also due to lack of experience with long term electronic archiving, migration of data is actually common practise to ensure the long term preservation.

Another means of protection consists in redundant storage of information. The result of questionnaire showed that in most cases there exists a second independent site combined with sophisticated backup strategies.

5.4.Accessibility

As important as to guarantee access to information over the time is to guarantee direct access for citizens independent of their location and their technical equipment.

Accessibility has to be guaranteed on different levels:

- Direct access to documents;
- Access through intermediate systems (interoperability).

Both types of access could be facilitated by the definition of common exchange standards, i.e. definition and implementation of sets of metadata which enable transfer of data between different services: producer and archiving service, archiving service and different types of distribution services (public and private).

5.5. Specific exigencies for electronic archiving of Official Gazettes

Archiving is independent of the period of validity and the usage of the information.

Each document, which has been created in a legal context, calls for archiving independently of its period of validity and the media, which has been used for production. It is part of the history and the cultural heritage of a state.

In this context, the specific requirement for electronic archiving of Official Gazettes is to guarantee unlimited preservation in particular for electronic formats.

6.IMPLEMENTATION

Examples:

France:

The French Official Gazette has chosen a partnership with the French National Library (Bibliothèque Nationale de France – BNF). The BNF automatically collects, i.e. means by a specific automatic process, all documents from the Website of the Official Gazette (journal-officiel.gouv.fr).

The decision to implement this archiving process had been taken in 2000 and systematic archiving started in 2005.

The main challenges for the BNF had been:

- the mass of data;
- dissimilar media (electronic media and paper);
- durability;
- to go for exhaustive collection instead of representative selection, which goes beyond the normal scope of preservation of the cultural heritage;
- which objects should be taken into account? URLs, files, host servers, domaines,...?
- correct definition of the length and the frequency of the collection processes in order to avoid skipping of contents which is temporary inaccessible because of technical reasons;
- to ensure an adequate degree of data security.

For the archive of the BNF, it had been decided to omit archiving of the electronic signature.

Thus the document containing the electronic signature of the representative of the Government as well as the set of information about the constitution of the legal act and metadata to ensure identification, properties and traceability are archived by an information system of the French Official Journal itself.

Italy:

The final version of the Italian Official Gazette in PDF/A format is archived by three different organisms:

- the Italian National Library;
- the Ministry of Justice and
- the Istituto Poligrafico e Zecca dello Stato S.p.A.

The documents are archived included digital signature (implemented as graphic code) and timestamp.

7.CONCLUSIONS

An electronic act without a legal binding status will not receive any additional value by archiving, even if archiving is performed under perfect conditions. But on the other side it is mandatory to archive legally binding electronic acts in order to preserve their legal value. Archiving becomes an essential function in the sense that legal value could be lost if archiving is performed under bad conditions.

In consequence, only secured electronic archiving assures that these documents could be preserved in a way that they preserve their legal binding status.

General conditions concerning understanding, integrity and authenticity of the document, identification of the author and traceability of operations have to be completely ensured at each stage of the archiving process.

Today, it has to be stated that only the documents, which have been created electronically are able to fulfil these conditions. Scanning of paper versions seems not to be sufficient to guarantee legal value. Compared to the original version, transformation of a paper version into an electronic image is comparable with taking a copy.

Concerning the technical aspects of electronic archiving, first of all consciousness concerning about the importance of this function has to be raised.

The definition of general principles for long term electronic archiving should be promoted, in order to obtain a common understanding of the constraints which have to be met in order to be able to ensure long time preservation.

Collaboration concerning the technical aspects of electronic archiving should be promoted:

- definition/recommendation of common standards for storage formats and metadata description;
- recommendations for certification;
- recommendations for self-documenting and self-containment.

8.PROJECTION

We have also discussed the consequence of the electronic publishing of Official Gazettes on the production process itself.

This means in particular the impact on the traditional professions and how to handle the change:

- Change of scale: necessity to automate the process (collection, deposit, indexation, storage and preservation);
- To be able to distinguish the logical and the physical layers of a document and to understand the characteristics of each layer in order to pilot the automatic processes in consequence;
- To define a new approach for the creation of metadata also in respect to facilitate indexation and search;
- Implementation of new ways of organisation and cooperation on national, regional and international level;
- Take into account new constraints and new challenges to guarantee accessibility for all users especially those who don't dispose of the necessary equipment.

The major challenges for the publishers are:

- Presentation of information in respect of its pertinence;
- Change of the relationship between publisher and archiving services: publishers no longer dispose but archiving services collect information with the help of automatic processes and robots;
- Internal archiving, i.e. to think about enabling archiving of their own site (choice of formats, protocols ...).

Appendix: Reference Documents

Please find below a list of reference documents (author, title, date, type), which could be of common interest. The documents will be uploaded to the Website of the Forum.

- 1) *Dictao, RSD, Caprioli, Archivage à valeur probante, Conférence du 05 avril 2007*, Presentation;
- 2) *Artesi, Un nouveau service d'archivage à valeur probante, 10/04/2008*, Reference: <http://www.artesi.artesi-idf.com/public/article.tpl?id=15467>;
- 3) *Daniel Guinier - OSIA, Le courrier électronique et l'archivage légal - Aspects technico-juridiques et solution, 2005*, Presentation;
- 4) *Daniel Guinier - OSIA, Le courrier électronique et l'archivage légal - Aspects technico-juridiques et solution, 2005*, Article;
- 5) *Groupe de travail DGME/SDAE - APROGED, La maîtrise du cycle de vie du document numérique - Présentation des concepts, Version 3 du 22 mai 2006*, Article;
- 6) *MARKESS International, L'Administration Française Face aux Enjeux de la Dématérialisation, Livre blanc - Edition 2007*, Article;
- 7) *Gartner - Storage Academy, Comment réussir un projet d'archivage numérique, Partie 1, Réunion Gartner 10 octobre 2007*, Presentation;
- 8) *Gartner - Storage Academy, Comment réussir un projet d'archivage numérique, Partie 2, Réunion Gartner 10 octobre 2007*, Presentation;
- 9) *EDIFICAS & IALTA, Guide de l'archivage électronique sécurisé, version V, 12 juillet 2000*, Article
- 10) *Daniel Guinier - IBM, Le courrier électronique et l'archivage légal, 2005*, Article;
- 11) *Gabriel Ramanantsoavina, Direction Générale de la Modernisation de l'Etat, L'archivage numérique et le programme Adèle, Séminaire Aristote 16 mars 2006*, Presentation;
- 12) *Eric A. Caprioli, Caprioli Associes, Aspects juridiques de l'archivage électronique, Dictao - Paris, 5 Avril 2005*, Presentation;
- 13) *Premier Ministre - Secrétariat général de la défense nationale - Direction centrale de la sécurité des systèmes d'information - Sous-direction des opérations - Bureau conseil, Archivage électronique sécurisé - Cahier des charges pour un système d'archivage électronique (sphère publique), Version du 16 mai 2006*, Article;
- 14) *Premier Ministre - Secrétariat général de la défense nationale - Direction centrale de la sécurité des systèmes d'information - Sous-direction des opérations - Bureau conseil, Archivage électronique sécurisé - Enjeux juridiques, Version du 16 mai 2006*, Article;

15) *Premier Ministre - Secrétariat général de la défense nationale - Direction centrale de la sécurité des systèmes d'information - Sous-direction des opérations - Bureau conseil, Archivage électronique sécurisé - P2A - Politique et Pratiques d'Archivage (sphère publique), Version du 24 juillet 2006, Article;*

16) *Direction des Archives de France – DGME - SDAE, Le standard d'échange de données pour l'archivage - Adele 103, 5 mai 2006, Presentation*

17) PDF tools AG, White Paper – PDF/A – The Basics, Version 2.0, January 22, 2007,

<http://www.pdfa.org/lib/exe/fetch.php?id=pdfa%3Aen%3Atechdoc&cache=cache&media=cc:whitepaper-pdf2.pdf>

18) Quattrocioni Maurizio, Orsini Nando, Official Gazette of Italian Republic – publication and archiving process, 4/0/2008,

http://circa.europa.eu/Members/irc/opoce/ojf/library?l=/04_preservation/2_meetings/2008-02-2122_meeting&vm=detailed&sb=Title, Presentation