Case Study Abstract/Summary
December 2008

TEAM Italy – Case Study 04

Test-bed name: ATLANTIS Project
Test-bed type: University archives
Topic/Title: Long-term Preservation of the Protocol Register
Case study type: Records
Starting Date: October 2007

INTRODUCTION

1. Case study description

In paper archives, the Protocol Register is first created then preserved. In electronic record systems, on the other hand, if there is any register as such it is usually unknown because it has been split up among distinct chronological records, each of them identified by a progressive, unique number and arranged by year. The whole of these registrations embodies the Protocol Register.

Italian law requires, for juridical evidence purposes, only that some information be included in proper fields within the protocol records; it does not, however, provide definite rules for preservation. There are few recommendations for printing and storing, on un-rewritable media, only the daily Protocol Register upon removal for retention. There are no recommendations regarding a yearly Protocol Register.

The Italian juridical system at the same time defines the Protocol Register both as a preferential trustworthy public act and an archival unit, which is at the root of the documentary system in every public organization.

This case study aims to analyze the "Protocol Register" entity, identifying its proper features, and establishing suitable requisites in the digital environment for supporting its long-term preservation. It also aims to establish the proper treatment for long-term preservation of a trustworthy digital object.

Specifically, the case study team aims to establish for this object:

- its juridical characteristics;

- its diplomatic characteristics; and
- the methods and practices, roles, procedures and controls needed for ensuring authenticity and reliability in long-term preservation.

This analysis is a first necessary step to outline the whole archival system's preservation in the digital environment for a public organization to ensure the authenticity and reliability of its records. In fact, the Protocol Register, along with the dossiers (archival units), are essential requirements for documentary production by an AOO (i.e., a homogeneous organizational area, which means the offices as a whole sharing the same recordkeeping system), as well of the archival fond by this AOO, which also in the digital environment must be set aside as a whole.

At the end of this analysis it will be possible to establish the principal requisites needed for a digital preservation system to ensure the custody of any reliable and trustworthy record, both documental and archival, in a digital environment; these records are self-standing and inalterable; they are reliable witnesses both of juridical value attributed to an act and organizational arrangement, and of the historical memory of the record–making creator.

2. Description of the technological context in which the digital object being analyzed exists

According to Italian law, all public administrations must provide for a digital recordkeeping system. These systems could have different degrees of complexity with regard to the maturity of an organization, its dimension, needs and cost-benefit ratio.

The electronic protocol system must, at a minimum, provide the following functionality: it must replace the traditional paper Protocol Register with an electronic system capable of generating separate electronic records, indisputably identified in chronological order. These registrations certify the creation of inward or outward records in the recordkeeping system for each AOO representing its organization. Other functionalities may be added aimed at supporting documental workflow or protocol system interoperability among different administrations.

Most Italian universities have chosen the recordkeeping system named *Titulus97*. *Titulus97* outlines the basic rules for university recordkeeping systems. Many universities also use the same software for record registrations. This software, in accord with the system's rules, both registers the minimum set of elements required for juridical registration (i.e., registering, classifying and making dossiers in electronic archives), and manages the record workflow (i.e., sorting the proper office and assigning officers the documents for treatment).

From a technological point of view, the Protocol System is based upon a native XML database accompanied by metadata in an open source format. The contents of files are stored in the file system following a logical arrangement: the informative units are ordered in the file system by year, AOO, classification and dossier. The XML database also provides for a sophisticated information retrieval system; the searched digital objects, regardless of interface used for their production, are materially XML files or parts of XML files. The system can extract any XML files from the application programs used for producing or upgrading them; through the use of different library filters library, it provides users with the ability to change many native formats into XML format.

In this technological context, the Protocol Register is an electronic file; that is to say, a stream of record. The registrations are produced inside the AOO as juridical statements referring to its settled outlines for inward and outwards records registered in a recordkeeping system.

The elements related to registering, classifying and making dossiers are organized and included inside fields set out by Italian law. The content of these fields cannot be modified. The electronic protocol system, producing records, attests the juridical characters through:

- records compilation by the public official authority belonging to the organization;
- use of fields compiled with un-modifiability requirements, so that the irreversibility of registrations is ensured;
- traceability of record cancellations; and
- use of controlled access and distinguished users' profiles.

One or more system servers physically manage the storage of registrations on rewritable electronic media (i.e., a server's hard disk). Access to the protocol system and to the recordkeeping servers is protected by a careful implementation of access privileges.

3. Identification and general description of the digital object to be analyzed

The goals of this diplomatic analysis of the Protocol Register are to:

1) **establish the digital objects nature as a record**

   The Protocol Register is a document that, because of the increasing computerization of recordkeeping systems, is not tied to a specific medium, but it retains its qualified juridical archival unit status of "preferential trustworthy public act", which holds, from the very beginning, a distinctive administrative, organizational, juridical and historical value altogether.

   The case study team intends to produce a yearly record book that includes all of the registrations by the recordkeeping system from January 1st (or from whenever is the opening date) through December 31st for each year. The contents of the record book will be represented by characteristics that are relevant from a juridical point of view. According to Italian law, the compulsory and inalterable information fields include: record number, date, addressee or receiver, matter, electronic record mark (if sent by electronic mail), and protocol number of received record, if available. The national *Titulus97* user's group has established to also include number and description of any attachment(s), as well as other fields needed to identify with certainty each recorded document in the Protocol Register system. This content is fixed and, once recorded, cannot be modified.

   The case study team has established the following content fields:

   1. record number
   2. registration date
   3. correspondent (sender if inward document / addressee for outward document)
   4. matter (meaningful)
   5. number of attachments
   6. description of attachments
   7. index number (if available) for each record
   8. index description (if available) for each record
   9. UOR (responsible organizational unit)

10. RPA (bureaucratic proceeding responsible)
11. archival classification code
12. electronic mark of record (either image or file, if electronic record)
13. record's author
14. registered modification's author
15. record cancellation
16. cancellation reason (bound to 14)
17. detection of administrator providing for cancellation (bound to 14)

The above listed fields produce a single record, which cannot be modified by the record operator. Any alteration, if needed, is traced and permanently included in the record itself in a provided field. The Protocol Register has formal elements like heading, evident on the document, which specify some features of the document itself such as: name and unique identifier for the author, writer's name, year of compilation of archival unit and the definition of documentary typology (i.e., "ITA – 80007010376 – UNBO – Alma Mater Studiorum – Università di Bologna – Servizio di COordinamento del Protocollo Informatico SCOPI – Registro di protocollo – 2007"). Additionally, a specific DTD, an XML schema and a style sheet altogether define other formal elements characterizing the register itself.

These tools show which and how many metadata of the object identified as the Protocol Register are inseparable elements of register contents; they also show the formatting procedures needed for an easier reading of the metadata themselves. At present, the Protocol Register has neither an unique identifying number inside the system nor a classification index; yet, it belongs to the archival fond created by the AOO.

The Protocol Register does not need, among the essential requirements of efficacy, a signature, since it can be surely referred to the institutional activity of the public official who had written it. In details, the Protocol Register is referred to the AOO that produced it by the heading and the issuing context; it must be preserved from the first phase of registration.

At the present, the Protocol Register is not fixed to a specific medium; it is stored in mass memory in the protocol system on rewritable media, which are regularly backed up. The Protocol Register is an output of registration and classification activities that are required by law to prove the production, sending and receipt of juridically-evident documents inside a public body.

2) establish if preservation should converge either on stored form or on evident one

According to Italian law, the protocol system must provide for the production of a daily register on a medium of retention suitable for preserving the registration. Actually, at the end of every working day, a daily register, must be created on a removable and un-rewritable electronic medium (this set of rules is going to be reviewed). This document must supply appropriate juridical guarantees for each registration included in the recordkeeping system. An executive or official, in charge of overseeing the electronic protocol system, has the responsibility for its creation; its custody is granted by a different person in a different place.

Italian law focuses attention on the production of a daily register on a removable and un-rewritable medium, only for juridical purposes and evidence. There are no directions for preservation procedures. However, it will be necessary to focus on preservation procedures for the intended yearly Protocol Register. The case study team thinks it is necessary to require a long-term preservation for protocol registrations, protecting the unitariness of the Protocol Register, as long as the protocol progressive number identifies in an unequivocal way each AOO registered document during the year.

It is necessary to focus on what form to preserve: the logical form of the document or the memorized one. Only the logical form of the document is able to guarantee the authenticity of records through time. Meaningful metadata must accompany the authenticity characteristics to set out and to keep memory of a self-standing and invariant digital object within the administrative-juridical context, of provenance and procedures, in which the Protocol Register is included.

3) establish the main characteristics needed to be protected by a preservation plan

It is necessary to protect the Protocol Register's unitariness as evidence of trustworthy acts attesting to the documentary production of the mentioned AOO. Establishing the necessary requirements for preservation will avoid fragmenting the act itself into separate records, thereby maintaining awareness of implied links among all the documents settling in an Agency archive.

Fixing the Register requirements (earlier in the creation phase) and its boundary reduces the possibility of manipulation or loss of relevant information for administrative or managerial purposes and historical ones. The Protocol Register has always been the contemporary tool kit allowing the "reading" of an archive; its importance is now much stronger in a digital context, which is not yet well defined.