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Electronic Archives in Ukraine Now and in Perspective

Electronic archives are important infrastructure components of the information-oriented society whose development is now underway in conformity with a long-term state program "Electronic Ukraine". The Ukrainian Scientific Research Institute of Archives and Dokumentation has organised work which is fundamental in solving the problem of creation of electronic archives: working out a concept of solution of the problem of a long-term preservation of electronic records (for 50 years and more) and design of a metadata scheme which will allow at any time to solve the issue of access, retention and use of electronic records and their integration into the infomedia of all possible levels. According to this concept, the Research Institute offers, along with creation of electronic records in the automated record-keeping systems, to implement the model of the archival electronic record as a unified data entity which is largely an analogue of the model that has been already introduced in the standard of archival preservation of electronic records in Australia (www.prov.vic.gov.au/vers/standards/pros9907.htm).

Basic positive features of the model are:

a) Use of formats suitable for a long-term preservation of an electronic record (PDF – ISO standard) and its metadata (XML – W3C standard);

b) Unification of metadata and an electronic record by means of its encapsulation into an XML format record which complies with the metadata scheme introduced at the standard level.

Thus the archival electronic record is presented as a unified data entity which does not depend in time on a diversity of program-technical means used by fonds creators. The concept is characterised as being economically expedient, that is less expensive in its realisation for creating electronic archives. A negative feature of the model can be, probably, the fact that it is necessary to solve an issue of automation of metadata forming, but this problem springs up whenever any other model is used. The Ukrainian

Electronic archives are important infrastructure components of the information-oriented society whose development is now underway in conformity with a long-term state program "Electronic Ukraine". The launched process of implementation of the electronic record and electronic record-keeping on the state level ("Electronic Government" system) actualizes to date the issue of creating electronic archives and presenting archival information resources in the Internet. While solving this issue, Ukraine is now in the process of working out up-to-date models and systems of presenting archival resources in the Web, forming regulatory and methodical projects as well as technological ones.

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The solution of the problem of a long-term preservation of electronic records lies in overcoming a so-called "damnation of migration" phenomenon when because of obsolescence of electronic record formats there appears a necessity of emulation or conversion in the new generation of program-technical means which requires considerable material resources and time.

Having investigated the experience of the world leaders, viz. Australia, the USA, Great Britain and Denmark, in solving the problem of archival preservation of electronic records, and being guided by the recommendations of the International Council on Archives and ISO standards, the Ukrainian Scientific Research Institute of Archives and Dokumentation has managed to work out the concept of preserving archival electronic records. The basic constructive accents of the concept are: (a) the "records continuum" strategy when preservation starts at the stage of creating electronic records in the automated records systems; and (b) the models of the archival electronic record as a unified data entity, and of the process of its long-term preservation (migration of formats of records, metadata and media).

According to this concept, the Research Institute offers, along

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A negative feature of the model can be, probably, the fact that it is necessary to solve an issue of automation of metadata forming, but this problem springs up whenever any other model is used.

Due to the use of formats for a long-term preservation of electronic records and the selected model of archival electronic record as a data entity, the preservation process presents the migration of electronic records from generation to generation of program-technical means as a process of updating the media and information by way of ordinary replication which is less expensive in comparison with such possible processes as emulation and conversion.

Electronic archives and information systems will be integrated into the information space of the concepts of electronic governing and electronic society with a common for all dictionary system and the description standard adapted to the needs of international communication (official language - Ukrainian, international - English).

The Ukrainian Scientific Research Institute of Archives and Dokumentation has already adapted the General International Standard Archival Description, ISAD (G), and plans to create an analogue to the ISO 14721:2003 standard electronic archives, Open Archival Information System (OAIS) - Reference Model. ISAD (G) is an archival description standard that allows to take stock of records, to control their storage conditions, safety and introduction into the sphere of public use and scientific turnover. In conformity with the given standard, it is possible to realize a multilevel description in a hierarchical relationship that corresponds to the data organisation accepted in Ukraine, viz. archives, fonds, files, records. An ISO 14721:2003 standard, whose essence is a functional and datalogical structure of the OAIS archival information system, can serve after a certain revision as a reference model for construction of electronic archives. Creation of a similar standard entirely deserves introduction into Ukraine's archival branch.

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Gli archivi elettronici sono componenti infrastrutturali importanti della società dell'informazione, il cui sviluppo è in conformità con il progetto statale a lungo termine "Ucraina Elettronica". L'Istituto di Ricerca Scientifica di Archivi e Documentazione dell'Ucraina ha organizzato un lavoro fondamentale nella risoluzione dei problemi della creazione di archivi elettronici: elaborando un progetto di soluzione dei problemi della conservazione a lungo termine dei documenti elettronici (per 50 anni e più) ed il disegno di uno schema di metadati che consentirà in qualunque momento di risolvere il problema dell'accesso, recupero ed uso dei documenti elettronici e la loro integrazione nei media informatici a tutti i livelli possibili. In accordo a tale concetto, l'Istituto di Ricerca offre, assieme alla creazione di documenti elettronici nei sistemi automatici di tenuta dei documenti, la possibilità di incrementare il modello di documento elettronico come un'entità documentale unificata che è l'analogo del modello già introdotto nella standard di conservazione archivistica del documento elettronico in Australia (www. prov.vic.gov.au/vers/standards/pros9907.htm).
Le basilari caratteristiche positive del modello sono:
a) uso di formati adatti ad una conservazione a lungo termine di un documento elettronico (standard PDF – ISO) e dei suoi metadati (standard XML – W3C);
b) unificazione dei metadati ed un documento elettronico per il tramite dell'incapsulamento in un documento in formato XML adatto allo schema di metadati introdotto al livello standard.
Così il documento elettronico è presentato come un'entità documentale unificata che non dipende nel tempo dalla diversità tecnico-programmatica utilizzata dai produttori di fondi. Il concetto è caratterizzato come economicamente conveniente, ovvero meno costoso nella sua realizzazione per la creazione di archivi elettronici. Un aspetto negativo del modello può essere, probabilmente, il fatto che è necessario risolvere un problema di automatizzazione della formazione dei metadati, ma tale problema si ingenera anche viene utilizzato un qualsiasi altro modello. L'Istituto di Ricerca Scientifica di Archivi e Documentazione dell'Ucraina ha già adattato le ISAD (G), e prevede di creare un analogo dell'ISO 14721:2003, standard per gli archivi elettronici, OAIS Reference Model.

Thus having the unified model of the archival electronic record as a unified data entity, its metadata scheme, the archival description standard, and also the standard of typical functional and datalogical structure of the information system of a long-term preservation of electronic records with Web Interface, it is possible to confirm that this would be enough for creating electronic archives of full value. In fact, this process has been already launched at the level of implementation of the State Program for Development of Archival Affairs in Ukraine for 2006-2010. Thus there were created a Web server of the State Committee of Ukraine's Archives (www.archives. gov.ua), thematic and accounting databases of the central and regional state archives, and a database "Central Archival Fonds' Catalogue" which in the nearest future, in conformity with the adopted Program, will be presented in the national network. The Program plans to create an archive for centralized preservation of electronic records and information resources by 2010.

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