MINISTRY OF DEVELOPMENT OF INFORMATION TECHNOLOGIES AND COMMUNICATIONS

TASHKENT UNIVERSITY OF INFORMATION TECHNOLOGIES

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METHODOLOGY OF CREATION OF AN ELECTRONIC ARCHIVE OF FILM AND PHOTO DOCUMENTS

Specialty 5A350602 – Electronic library and archive

A DISSERTATION

Submitted for the Master's degree

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ANNOTATION OF MASTER DISSERTATION

on the theme

METHODOLOGY OF CREATION OF AN ELECTRONIC ARCHIVE OF FILM AND PHOTO DOCUMENTS

Research actuality. Today, many digital documents are still printed and then filed in paper form. This practice does little to lower costs and is gradually becoming untenable. Sophisticated electronic documents, such as databases and multimedia objects, can not be printed to paper in a meaningful way. The deployment of electronic document management and archiving systems is the way forward.

However, several legal obstacles can stand in the way of an optimal use of an electronic document management system. Prior to the implementation of such a system, the limits posed by law on the use of electronic documents must be researched and applied to the company's circumstances.

Actuality of this research consists in defining exact metadata elements of film and photo catalogization.

Objective of research. Making accessible of our great cultural heritage materials in film and photographical form for users, researchers and others is the main objective of this research. Also defining the metadata elements for such kind of documents and in the result storing in long-term conditions are another objectives.

Research tasks. There are following tasks of this research:

- Studying importance and feasibility of creation of electronic archives of film and photo;
- Analysing of existing electronic archives of film and photo;
- To solve the tasks of digitizing and cataloging film and photo;
- Develop functional and organizational aspects of creation of electronic archive of film and photo.

Object of research. The Central State archive of film, photo and sound recordings and all archival processes of this archive.

Subject of research. Archival collections, digitization methods, descriptions of film and photo, standards and rules of catalogization.

Methods of research. In this research such methods as the bases of system and comparative analysis and catalogization in MARC21 format were used.

Scientific novelty of research consists on analysis of metadata formats of electronic archives, design of models and algorithms of creation electronic archive, defining the standard metadata elements of film and photo and database creation in Central State archive.

Practical value. Creation electronic archive and search engine to search documents in electronic archive. The given list of metadata can be used on any archive system which need to describe film and photo.

Structure and volume of dissertation. This master dissertation consists of introduction, three chapters, conclusion, references, appendix.

Science supervisor _____

(sign.)

Master _____

(sign.)

O’ZBEKISTON RESPUBLIKASI AXBOROT TEXNOLOGIYALARI VA KOMMUNIKATSIYALARINI RIVOJLANTIRISH VAZIRLIGI

TOSHKENT AXBOROT TEXNOLOGIYALARI UNIVERSITETI

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KINOFOTO HUJJATLARINING ELEKTRON ARXIVINI YARATISH METODIKASI

mavzusidagi

MAGISTRLIK DISSERTATSIYASI ANNOTATSIYASI

Mavzuning dolzarbligi: Arxivlar tarix ko‘zgusi, uning jamiyatdagi o‘rni beqiyosdir. Mamlakatimiz tarixi, uning rivojlanish jarayonlarini o‘rganishda arxivlarda saqlanayotgan arxiv hujjatlari beqiyos qiymatga ega manba hisoblanadi.

Kinofotohujjatlarning tarixiy manba sifatida o‘ziga xosligi shundan iboratki, ular bo‘yicha tezkor axborot qidirishning asosiy vositalaridan biri kataloglar hisoblanadi. Bu avvalo mavzuli va alfavitli kataloglar, shuningdek axborotni alohida olingan kinohujjatni saqlash birligi ichida muayyan lavha topish darajasida ma’lumot izlash imkonini beruvchi turli yo‘lko‘rsatkichlar shular jumlasidandir.

Arxiv hujjatlarini zamonaviy axborot texnologiyalardan foydalangan holda raqamlashtirish, elektron katalogini, kartotekasini, ma’lumotlar bazalarini

shakllantirish jarayonini muvofiqlashtirish va raqamlashtirilgan arxiv hujjatlaridan iste'molchilar tez va ishonchli, sifatli foydalanishlari imkoniyatini taqdim etadigan metodika ishlab chiqish bugungi kundagi eng dolzarb muammolardan hisoblanadi.

Ishning maqsadi va vazifalari: Foydalanuvchilar va ilmiy tadqiqotchilarga kino va foto hujjatlarda aks ettirilgan buyuk madaniy merosimizdan unumli foydalanishlarini ta'minlash maqsadida ularning tezkor qidiruvini tashkil etish hamda kelajak avlodlarga yetkazish uchun uzoq muddatli saqlanishiga erishish tadqiqotning asosiy maqsadi hisoblanadi.

Ushbu maqsadni amalga oshirishda quyidagi vazifalar belgilandi:

- kinofoto hujjatlarning elektron arxivini yaratish ahamiyatini o'rganish, uning imkoniyatlari va muammolarini tahlil qilish;
- kinofoto hujjatlarni raqamlashtirish va kataloglashtirish masalalari yechish;
- Kinofoto hujjatlar elektron arxivini yaratishning tashkiliy va funksional jihatlarini ishlab chiqish.

Tadqiqot obyekti va predmeti: Tadqiqot obyekti - O‘zbekiston Respublikasi kinofotofono hujjatlari Markaziy davlat arxivi va unda olib boriladigan arxiv jarayonlari. Tadqiqot predmeti: O‘zbekiston Respublikasi kinofotofono hujjatlari Markaziy davlat arxivi hujjatlari tavsifi, jumladan, elektron hujjatlar, ularning ro‘yxat va yig‘majildlari, elektron arxivga oid qonunlar va standartlar, elektron arxivni yaratishda qo‘llaniladigan dasturiy ta'minotlar va dasturlash tillari, shuningdek, metama'lumotlar strukturalari.

Tadqiqot uslubiyati va uslublari: : Ilmiy ishda tizimli va qiyosiy tahlil usullari, MARC formatlardan foydalanish usullari qo'llanilgan.

Tadqiqot natijalarining ilmiy jihatdan yangilik darajasi: arxiv hujjatlarining ma'lumotlar bazasini yaratishda qo'llaniladigan metama'lumotlar tizimini tadqiq qilish va ularni asoslash, elektron arxivlarni tahlil qilish, elektron arxiv ma'lumotlar bazasini yaratish.

Tadqiqot natijalarining amaliy ahamiyati va tatbiqi: Tadqiqot natijalaridan kinofoto elektron arxivlari va ma’lumotlar bazasini yaratishda hamda arxiv ishiga axborot-kommunikatsion texnologiyalarni samarali tatbiq etishda foydalanish mumkin.

Ish tuzilishi va tarkibi: Tadqiqot kirish, uch bob, xulosa, foydalanilgan adabiyotlar ro’yhati va ilovalardan iborat.

Bajarilgan ishning asosiy natijalari: Tadqiqotning asosiy mazmuni respublika jurnal va ilmiy to’plamlaridagi maqola va tezislarda aks etgan.

Ilmiy rahbar _____
(imzo)

Magistratura talabasi _____
(imzo)

CONTENT

Acronyms

AACR2	Anglo-American Cataloguing Rules, second edition
ARMAT	Axborot-Resurs Markazlarining Avtomatlashtirilgan Tizimi (Automated Library Software)
CSA	Central State Archive
CSAFPSR	Central State Archive of Films, Photographs and Sound Recordings of the Republic of Uzbekistan
DACS	Describing Archives: A Content Standard
DVD	Digital Versatile Disc
EAD	Encoded Archival Description
HTML	HyperText Markup Language
ICA	International Council on Archives
ISAAR (CPF)	International Standard Archival Authority Record for Corporate Bodies, Persons and Families
ISAD(G)	General International Standard Archival Description
ISBD	International Standard Bibliographic Description
ISO	International Standard Organization
JPEG	Joint Photographic Experts Group
MARC	MAchine-Readable Cataloging
MPEG	Moving Picture Experts Group
NARA	The National Archives and Records Administration of the USA
NFSA	The National Film and Sound Archive of Australia
OCR	Optical Character Recognition
PDF	Portable Document Format
RAD	Rules for Archival Description
RDA	Resource Description and Access
TIFF	Tag Image File Format
WORM	Write-Once Read-Many
XML	eXtensible Markup Language

Introduction

Today, paper is still the medium of choice for the preservation of documents. Paper's long life cycle and relatively simple storage methods do, indeed, make it very suitable for the long-term preservation of many types of information.

But using paper also has disadvantages. A lot of storage space is needed to stock paper; which imposes substantial costs on companies. The legal obligation to preserve documents often confronts corporations with serious archiving problems due to lack of space. Moreover, retrieving information from paper archives is a labourintensive and therefor expensive endeavor. Paper does not allow information to be processed rapidly and efficiently.

For these reasons more and more companies are looking to switch to an electronic document management system to manage their documents. Many are considering replacing original paper documents with electronic copies, in order to reduce the need for storage space. Extensive search functions help to ensure that relevant information is rapidly available.

The advantages of electronic over paper storage are not the only reasons companies have for using a digital archiving system. Companies are increasingly confronted with documents that originate in a digital form. Today, most documents in a company are produced electronically through a variety of computer applications. The exchange of information between business partners is also often handled electronically, so that an electronic version is the only version that exits.

At the meeting of the Cabinet of Ministers dedicated to the socio-economic development in 2012 and the most important priorities of economic program for 2013, President Islam Karimov emphasized the importance of the implementation of ICT policies and projects. "All the more important to accelerate the implementation of measures in the sphere of information and communication technologies and telecommunication projects. We should be aware that without a radical, I would say explosive move towards wide

implementation in all sectors of the economy, in our daily lives of modern information and communication systems, it is difficult to see the future" – said the President of the Republic of Uzbekistan[5].

Research actuality. Today, many digital documents are still printed and then filed in paper form. This practice does little to lower costs and is gradually becoming untenable. Sophisticated electronic documents, such as databases and multimedia objects, can not be printed to paper in a meaningful way. The deployment of electronic document management and archiving systems is the way forward.

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Chapter I. Importance and feasibility of creation of electronic archives of film and photo

1.1. Terms and definitions for an electronic archive

An archive is an accumulation of historical records or the physical place they are located[1]. Archives contain primary source documents that have accumulated over the course of an individual or organization's lifetime, and are kept to show the function of that person or organization. Professional archivists and historians generally understand archives to be records that have been naturally and necessarily generated as a product of regular legal, commercial, administrative or social activities. They have been metaphorically defined as "the secretions of an organism"[2], and are distinguished from documents that have been consciously written or created to communicate a particular message to posterity.

In general, archives consist of records that have been selected for permanent or long-term preservation on grounds of their enduring cultural, historical, or evidentiary value. Archival records are normally unpublished and almost always unique, unlike books or magazines for which many identical copies exist. This means that archives are quite distinct from libraries with regard to their functions and organization, although archival collections can often be found within library buildings[3].

A person who works in archives is called an archivist. The study and practice of organizing, preserving, and providing access to information and materials in archives is called archival science. The physical place of storage can be referred to as an archive (more usual in the UK), an archives (more usual in the USA), or a repository[4].

[1] "Glossary of Library and Internet Terms". University of South Dakota Library. Archived from the original on 2009-03-10. Retrieved 20 April 2016.
[2] Galbraith, V.H. (1948). Studies in the Public Records. London. p. 3.
[3] "A Glossary of Archival and Records Terminology". Society of American Archivists. Retrieved 7 December 2012.
[4] "Glossary of Archival and Records Terminology". Society of American Archivists. Retrieved 2016-04-21.

When referring to historical records or the places they are kept, the plural form archives is chiefly used[5]. The computing use of the term 'archive' should not be confused with the record-keeping meaning of the term.

Historians, genealogists, lawyers, demographers, filmmakers, and others conduct research at archives. The research process at each archive is unique, and depends upon the institution that houses the archive.

Preservation is “the practical task that consists of keeping documents intact for future use”. In preserving documents, we want to make and keep the information that they contain available for the future. There are many different reasons for preserving documents. In the business community, documents are mainly preserved for legal reasons. Documents are kept because we are required to do so by law or because we are obliged to do so by virtue of a contract, or for the sake of their value as evidence. For society in general, historical and scientific research are two additional reasons for preserving documents.

The International Council on Archives (ICA) has developed a number of standards on archival description including the General International Standard Archival Description ISAD(G)[6]. ISAD(G) is meant to be used in conjunction with national standards or as a basis for nations to build their own standards. In the United States, ISAD(G) is implemented through Describing Archives: A Content Standard, popularly known as "DACS"[7]. In Canada, ISAD(G) is implemented through the Council of Archives as the Rules for Archival Description, also known as "RAD"[8].

In order that an organization might apply a recognized specifications framework for the storage, use, archiving, retrieval and display of electronic documents, both technical and organizational measures need to be taken to ensure document integrity and long-term preservation.

In this context, an electronic information system shall implement a pre-defined archival policy.

[5] "archive" The Oxford English Dictionary. 2nd ed. 1989. OED Online. Oxford University Press.
[6] ICA Standards Page
[7] "Describing Archives: A Content Standard". Society of American Archivists. Retrieved 26 April 2016.
[8] Rules for Archival Description. Bureau of Canadian Archivists. 1990. ISBN 0-9690797-3-7.

It is important to recognize that information systems will capture electronic documents that are being submitted for long-term storage and use. The term “capture” in this sense reflects the receipt and processing of information to be managed by the information system. Where hardcopy documents need to be stored and managed in electronic form, these documents shall be scanned and indexed prior to their capture in the information system in the file system or database shall not be erasable, changeable or able to be replaced by new data.

Procedures and security requirements shall be implemented in order to:

a) control the process of archiving;

b) prevent and/or detect modifications made to documents or to the data necessary for their retrieval and display;

c) ensure the integrity of audit trail data (including the log of the system events).

An electronic information system shall feature characteristics of:

1) suitability for long-term preservation;

2) integrity;

3) security;

4) traceability.

Level of requirements

Different organizations might have distinct and individual approaches to risks and requirements for information systems used for the preservation of electronic documents.

Table 1.1 outlines degrees of levels of these requirements. It summarizes general characteristics and practical methods for implementation at the level of requirement preferred by the organization, with regard to the nature of documents to be preserved and potential risks incurred.

Additional requirements may be selected based on specific needs and acceptable levels of risk.

Table 1.1. Requirements of information systems

Characteristic	Minimal requirements	Additional requirements
Suitability for longterm Preservation	Use of standardized or industry-standard and publicly available file formats	Format conversion Document scanning
	Metadata description of document	Standard metadata format
	Migration of media	
	Format conversion	Control and conversion of formats at time of capture Format obsolescence alert Planned and traceable format conversion
	System change management	
Integrity	Guaranteed by storage on media: — physical WORM — logical WORM on fixed media with — events log — techniques and procedures for detection and prevention of substitutions of input — logical WORM on removable media (rewritable/erasable media) — rewritable/erasable media (normal security level)	Strong security level Advanced security level Strong security level Advanced security level
	Capture process of archives	
	Alerts prior to destruction of archives	
	Description of the process of destruction of archives	Definition of change procedures for preservation periods Post-destruction preservation of metadata and audit trail

Characteristic	Minimal requirements	Additional requirements
Security	Identification of persons and processes accessing archives	Strong authentication
	Backup copies of archives	Use of different types and forms of media Protection from risks of flood, fire, etc.
	Controlled archiving operations (identification and traceability)	Strong authentication Retrieval in formats other than input formats
	Continuity of access to archives	
Traceability	Date and time stamp	Date and time stamp from trusted third party
	Maintenance of a technical file (archival policy, general conditions of services, operations procedures, lifecycle of document)	Adjustment to the organizational processes of the customer and related attestations
	Maintenance of an audit trail of archives lifecycle and events Log	Digital signature and date and time stamp of attestations of operations and events, in units or batches Definition of the granularity of the batches of events to which a digital signature applies Frequency of archiving of audit trails and logs

Terms and definitions

The following terms and definitions are given in international standard ISO 14641-1:2012(E) and we use these terms in our research.

access - processes of retrieving and displaying (playing) electronic documents for operational, evidential or historical purposes.

accession - (v.) to transfer physical and legal custody of documentary materials to an archival institution. (n.) materials transferred to an archival institution in a single accessioning action.

accretion - an addition to an accession.

acquisition - the process of identifying and acquiring, by donation or purchase, historical materials from sources outside the archival institution.

administrative value - the value of records for the ongoing business of the agency of records creation or its successor in function.

archive(s) – (1) set of documents produced or received, whatever their date, format or storage media, by any individual, organization, public or private service, in the course of their activity. (2) The agency responsible for selecting, preserving, and making available records determined to have permanent or continuing value. (3) The building in which an archival institution is located.

archival institution - an institution holding legal and physical custody of noncurrent documentary materials determined to have permanent or continuing value. Archives and manuscript repositories are archival institutions.

archival policy - legal, functional, operational, technical and security requirements of an internal or external information system.

archive lifecycle log - log which records audit trail data related to the document lifecycle archiving process.

archive restitution - return and transfer of archived documents to their originator, or to a duly appointed person or organization.

archival system profile - set of properties that applies to a class of archives that share common characteristics in terms of confidentiality, retention and disposal schedules, and access rights (e.g. create, read, modify, delete).

audit trail - aggregate of the information necessary to provide a historical record of all significant events associated with stored information and the information system.

collection - (1) an artificial accumulation of materials devoted to a single theme, person, event, or type of document acquired from a variety of sources. (2) in a manuscript repository, a body of historical materials relating to an individual, family, or organization.

data - digital form of information which can be accessed, read and/or processed.

date and time stamp - sequence of characters denoting the date and/or time at which a certain event occurred.

deposit - set of documents sharing the same archival system profile

digital archival - set of actions aiming to identify, capture, classify, preserve, retrieve, display and provide access to documents for informational or historical purposes, or for the duration required to meet legal obligations.

digital document - digital representation of content that is stored and managed electronically.

digital fingerprint - bit sequence generated from a digital document using an algorithm that uniquely identifies the original document.

digital seal - method for ensuring the integrity of a document including hash functions, digital signatures and, optionally, a date and time stamp.

digital signature - data which, when appended to a digital document, enable the user of the document to authenticate its origin and integrity.

digitization - conversion of an analogue document (paper, microform, film, analogue audio or audiovisual tapes) to digital format for the purpose of preservation or processing.

digitized document - result of digitization of information initially stored on physical media (paper, microform, and film, analogue audio or audiovisual tapes).

document fidelity - property of an archived document which renders all the information contained in the original source document.

durability - attribute of a document which remains readable during its entire lifecycle.

electronic information system - system designed to receive, preserve, access and transfer archives in an electronic form.

electronic attestation - information produced to provide evidence that an action or an electronic transaction has occurred.

electronic archive - the designated repository in which electronic records are retained for their long term preservation.

events log - log which records audit trail data related to the system operations.

film - Photography, Motion pictures - A thin sheet of plastic, in a sheet or roll, coated with light-sensitive emulsion to be exposed in a camera; Motion pictures - A motion picture production; a movie; Motion pictures - The discipline of making motion pictures.

finding aid - a description from any source that provides information about the contents and nature of documentary materials.

format conversion - operation converting a digital document to a different electronic format.

hash function - mathematical algorithm used for turning some kinds of data into a relatively small integer.

integrity - attribute of a document whose content is completed and unaltered.

legibility - attribute of an archived document which allows access to all the information it contains.

life cycle of records - the concept that records pass through a continuum of identifiable phases from the point of their creation, through their active maintenance and use, to their final disposition by destruction or transfer to an archival institution or records center.

lossy compression - compression algorithm which loses some of the original information during compression.

machine-readable records - RECORDS created for processing by a computer.

media migration - act of transferring a document from one medium to another, particularly with regard to managing media obsolescence.

metadata - data describing the context, content and structure of a document and their management over time.

photograph - A still picture formed on a light-sensitive surface using an optical system and fixed by a photochemical process; An image rendered using a camera.

records - all recorded information, regardless of media or characteristics, made or received and maintained by an organization or institution.

replication - process which consists of copying information between redundant resources, notably software or hardware components, to improve reliability, fault-tolerance or accessibility.

time source - internal or external component of an information system providing a reliable and objective time reference suited to requirements.

time-stamp token - data object that binds a representation of data to a particular time (expressed in UTC), thereby providing evidence that the data existed at that time.

transferability - ability to recover an authentic digital archive (information, data, objects and all related metadata from one information system) in order to transfer it to another information system by means of a procedure specified in advance.

trusted third-party archive service provider - third-party individual or organization in charge of archives preservation.

1.2. The history and present of Central State Archive of Films, Photographs and Sound Recordings of the Republic of Uzbekistan

In view of the materials of archival department heads meeting of the Central Asian republics and Kazakhstan, on 18 March 1943, the Government of Uzbekistan adopted a resolution on streamlining the network archival authorities of the republic. In the result, the Government has issued a decision on the organization Central State Archive of Films, Photographs and Sound Recordings of the Republic of Uzbekistan (CSAFPSR) in Tashkent. At the end of March of the same year, the State Commission approved the state archive staff of four persons. Archive Director was appointed A.S. Etdelmant[9], who had experience in organization of such archive in Kyrgyzstan.

With the creation of the archive it was entrusted with the task of concentration, calculation and storage of incoming documents, their scientific and technical processing, organization of the use, promotion and delivery of documents for temporary use of the institutions, organizations and enterprises, and establishing state control over the storage of documents in the subordinated institutions. Within the framework of the tasks in the archive work was conducted in the following areas:

1) was organized by the Inspection and research work aimed at identifying the presence of Film in public institutions of Tashkent city;

2) started work on the scientific processing of documents and preparation of the scientific and methodical manuals for work with documents;

3) equipped with special laboratory;

4) carried out the systematization of documentary photographs taken by the abolished photo department of CSA.

For the purposes of acquisition of the archive of film, photograph and sound recording Archive Inspectorate has started to identify the institutions and

[9] CSA RUz, f. 2668, in. 1, f. 7, l. 3.

organizations that are stored in its archives of audio-visual materials. As a result of studies undertaken by the archives of institutions, organizations, companies in Tashkent was identified 73 institutions that store totally 577,240 storage units of films, photographs and sound recordings. Of them, 165,896 photos, 402,701 aerias, 1,794 films and photos and one institution in which 6,849 phonodocuments were focused[10].

In the next 1944 - 1945 annual archive work plans have been developed. In accordance with the work plan in the archive was designed to:

1) preservation of documentary materials;

2) ordering of materials; Inspection and research work;

3) acquisition of State Archive of film, photograph and sound recordings;

4) publish scientific work[11].

Against the background of the events of heavy and poor working conditions, archivists very conscientiously performed their duties: to produce scientific and technical processing materials of Uzfimgiz received from Uztag for storage in 1944; as a result of complete processing in the fond of Uzfimgiz there were already 8,131 photo documents, of which 4,800 were positive. The absence of the necessary conditions for storage has not been able to stop accepting new documents.

In 1946, several conditions have changed to provide preservation of documents. One of the archive rooms was equipped with racks and cabinets for storage of photographic documents, lab was installed in the other room, and the third was equipped with sound editing table, intended for the demonstration of films and work on them. This allowed archivists begin accepting new movie documents for safekeeping. For example, in 1946, 162 sets of newsreels, filmed between 1936 and 1941 years, were received from the Tashkent newsreel studio.

Throughout the year, the status of documentary photographs was audited. Special expert commission consisting of the director of archive, senior

[10] Alimov I.A. et al. Handbook of archival science in Uzbekistan (1918-1968). - T: Uzgiprozem, 1970. 46 p.
[11] CSA RUz., f. P.- 2668, in. 1, f. 18, l. 1.

researcher and photo lab assistant worked on the identification documents, which are not subject to storage. If in the selection of documentary photographs is not attended by representatives of other research institutions, in the expertise of films participated by senior officials of the Tashkent newsreel studios, production managers and artistic parts, and operators. strengthened ties with a number of specialized institutions were established as a result of the joint work of archivists and film workers, the work on drawing up the thematic cards, inventorying and numbering of film and photo was organized. In the result it was found that the book inventory, which made in previous years, did not respond the basic requirements of the stock accounting. Later, an archive started keeping documents by their size, old inventory books have lost their value and served only as a reference.

The reorganization of the archive in 1959 did not allow for the subsequent years, until the recreation of CSAFPSR of Uzbekistan as an independent institution, to deploy a more or less significant work on the storage and use of audiovisual sources.

In 1977, the problem was solved, and work began to eliminate gaps of previous years. Gradually a question on archive refitting was solved. Cinematographic laboratory has started it's work, card sections for systematic catalog, rack shelves and sectional cabinets for photo storage were acquired.

Following independent departments have been created:

1. The Division of departmental archives, acquisition and expertise of the value of documents;
2. The Division of information retrieval systems;
3. Archive of Photos;
4. Archive of Films;
5. Archive of Sound Recordings;
6. Photo and Film Laboratory;
7. Group operation and maintenance of buildings[12].

[12] CSA RUz, f. P. - 400, in. 1, f. 3512, l. 58.

By embarking on the path of sovereignty, the people of Uzbekistan involved in the process of building a democratic and legal civil society, restoration of ancestral, spiritual and moral values. This, in its turn, determined the formulation of new tasks and the development of new directions in the activities CSAFPSR of Uzbekistan, strengthening its place and role in the system of national research institutes.

Large changes took place in the structure of the archive, as well as in its activities. Today there are following departments in CSAFPSR of Uzbekistan:

- Administration;
- The Division of departmental archives, acquisition and expertise of the value of documents;
- The Division of scientific and reference system and methodical work;
- Document use Division;
- The Division of documents preservation;
- The Division of material and technical supply, operation and maintenance of buildings.

From the first days of achievement independence of Uzbekistan, the normative documents of archival institutions began to be updated. Operating instructions to verify the presence and status expertise film was composed in the CSAFPSR; in 1992, a guide for amending the scheme of photographs classifications was developed[13].

The priority task of the archive is to preserve documents. The Division of documents preservation coordinates this activity. Much attention is paid to the account. Each storage unit is under control. There is the principle of personal responsibility for the safety of each film, photo and sound recordings. The rolls of films are placed in a metal box and covered with a lid, originals of phonograph records are wrapped in paper and stacked capacitor in separate envelopes, because they are susceptible to corrosion. Envelopes are made from cardboard and pasted inside with a soft cloth. Magnetic recording placed in

[13] CSA RUz, f. P-2268, in. 1, f. 372, l. 1-3.

glossy cardboard boxes and stored in a wooden cabinets. Negatives stacked inside envelopes of opaque paper and stored in boxes that are installed on conventional racks. The presence of documents are checked regularly, an optimal temperature and humidity conditions are maintained in the storage. Archive has equipment that allows to restore the film, prepare copies, transfer films with combustible bases to noncombustible.

Original catalogs are composed for each type of document in the archive. So, to work with photographs in the archive, a systematic and name catalogues are developed. In a systematic catalog focused photographs relating to a particular topic. Name catalogue allows you to find a particular picture of interested person or researcher. There is author catalogue that facilitates making inquiries most often when using artistic photographs or documentary photographs as works of art. This catalog allows you to find the works of famous photographers of Uzbekistan available in the archive, works that may be the subject of separate studies or is of undoubted interest for the history of photography and photographic art. For example, personal fonds of M.Z.Penson, A.P.Sterenberg and others.

Film in its description in the inventory lists, assembly lists and annotations is characterized by the following data:

- name of the movie;
- the date of issue;
- studio, which released the film;
- specifications;
- the content of the film;
- the content of the individual frames;
- the creative team, cameraman, director, composer.

By 1 January 2016 in storage 286,289 units are stored in the archive, 19,640 units of them are films, 251,459 photos and 15,190 units sound recordings.

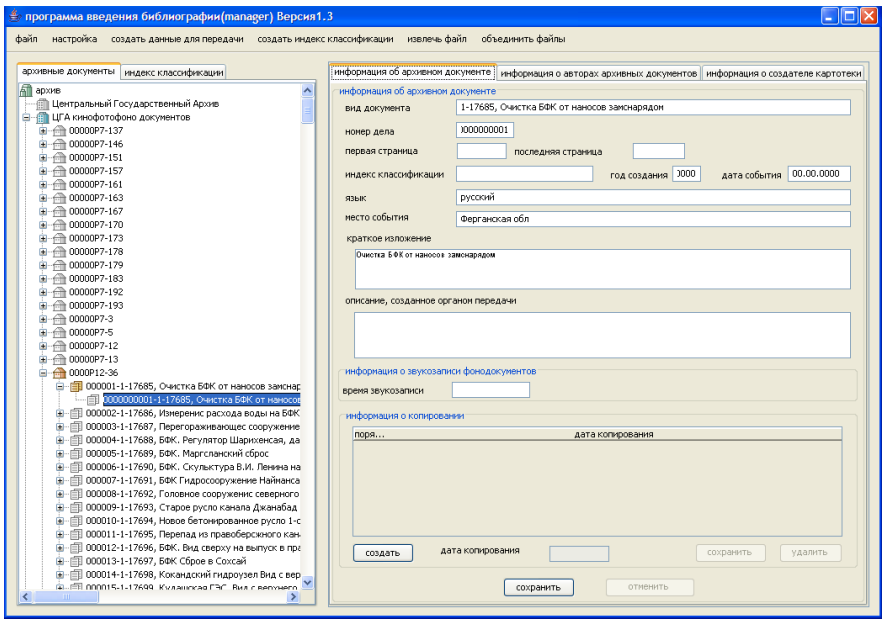

Figure 1.1. Current software of CSA.

It should be noted that according to the Decree of the Cabinet of Ministers dated 30 October 1999 “On approval of regulations on archives” photos, films and sound recordings of state enterprises, institutions and other organizations, which are the source of acquisition of the State archive fond, shall be transferred to state archives for storage as part of the NAF every 3 years from the time of their creation.

Figure 1.2. QR code of CSA FPSR of Uzbekistan

Qualitatively new opportunities have emerged by the attainment of political independence of the Republic of Uzbekistan. This, in turn, identified new challenges and trends in the archive activity, strengthening its role in the system of scientific institutions of Uzbekistan.

The archive has a rich collection of unique documents, reflecting the history of Uzbekistan and Turkestan with 60’s of XIX century to the present day.

Photographs reflect the development of the industry (railway construction, irrigation canals, industrial processes in factories, carpet manufacturing, farming equipment, coal production process, etc.), agriculture (primitive work tools, plowing the land using a “omoch”, picking cotton, etc.), transport and communications (railway stations, postal and telegraph employees of Turkestan,

1917), trade (shops selling fabrics, skullcaps, pottery; shopping arcade on Registan Square, the views of bazaars in the cities of Andijan, Bukhara, etc.).

Main objectives of the archive:

- Reception and acquisition of archive with the specialized documents;
- Development and improvement of the accounting system and scientific reference archive system;
- Providing storage and preservation of documents of the National Archival Fond of the Republic of Uzbekistan stored in the archive;
- The expansion of the information database of archive;
- Organization of comprehensive use and publication of documents;
- Conducting research and methodological work in the field of archival science, record and archeology;
- Providing scientific-methodical and practical assistance in organizing the work of departmental archives.

1.3. An analysis of existing electronic archives of film and photo

Archives provide firsthand information about the past. They are valuable to researchers, scholars, students, journalists, lawyers, and others who want to know about people, places, and events in the past. Historians, genealogists, lawyers, demographers, filmmakers, and others conduct research at archives. The research process at each archive is unique, and depends upon the institution that houses the archive. Local archives may be your most convenient source of answers to these frequently asked questions: Where can I find information on the history of my family? My community? My business or organization? Are the older documents in my possession valuable for historical purposes? What should I do with them?

There are many kinds of archives in the world. Below are the foreign archives (electronic archives) of film and photo.

The National Archives of Great Britain

About: Collects and secures the future of the government record, from Shakespeare's will to tweets from Downing Street, to preserve it for generations to come, making it as accessible and available as possible. Their collection is one of the largest in the world, containing over 11 million historical government and public records. From Domesday Book to modern government papers and digital files, our collection includes paper and parchment, digital records and websites, photographs, posters, maps, drawings and paintings.

As a general rule, government records that have been selected for permanent preservation are sent to us when they are 30 years old, though the government has begun its move towards releasing records when they are 20 years old. Many are also transferred to us earlier under the Freedom of Information Act.

The National Archives is home to millions of historical documents, known as records, which were created and collected by UK central government departments and major courts of law. For example, we have records from the Home Office, the Foreign Office and the Central Criminal Court. It takes 185km of shelving to store our records, and this increases every year.

Web: http://nationalarchives.gov.uk

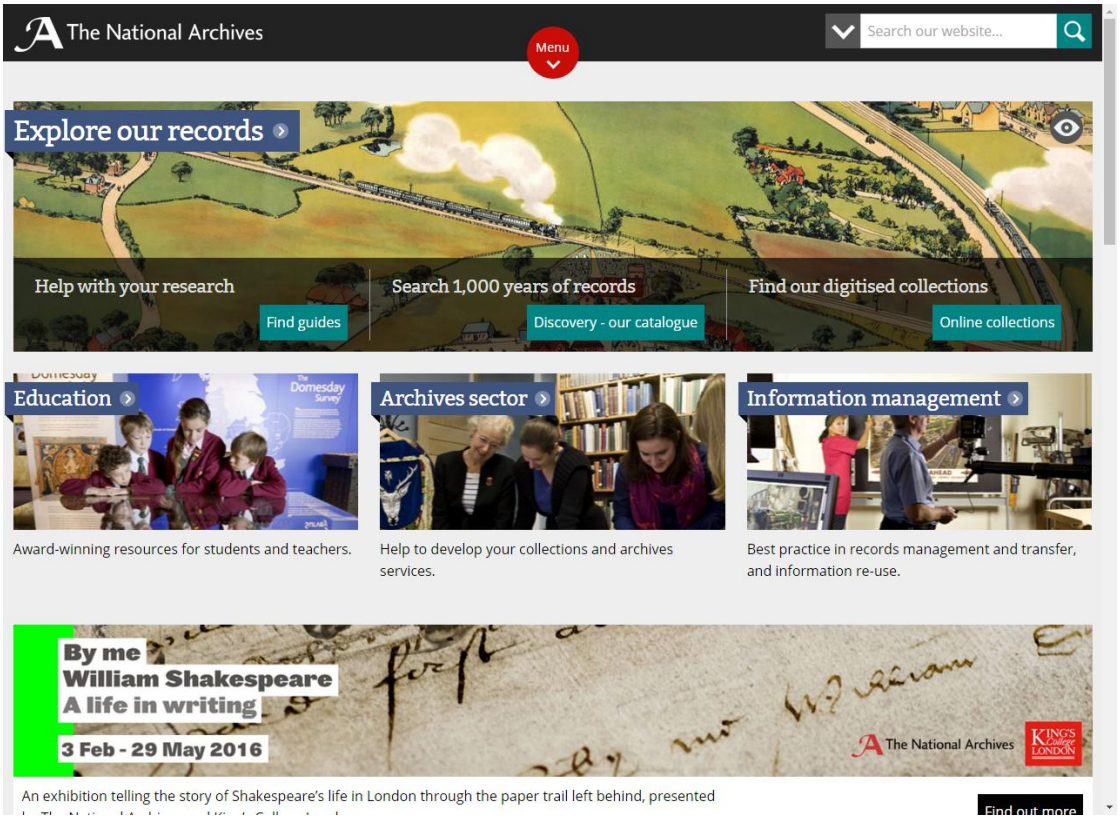

Figure 1.1. Website interface of The National Archives of Great Britain.

Site Discovery holds more than 32 million descriptions of records held by The National Archives and more than 2,500 archives across the country. Over 9 million records are available for download.

The National Archives and Records Administration (USA)

The National Archives was established in 1934 by President Franklin Roosevelt, but its major holdings date back to 1775. They capture the sweep of the past: slave ship manifests and the Emancipation Proclamation; captured German records and the Japanese surrender documents from World War II; journals of polar expeditions and photographs of Dust Bowl farmers; Indian treaties making transitory promises; and a richly bound document bearing the bold signature "Bonaparte" – the Louisiana Purchase Treaty that doubled the territory of the young republic.

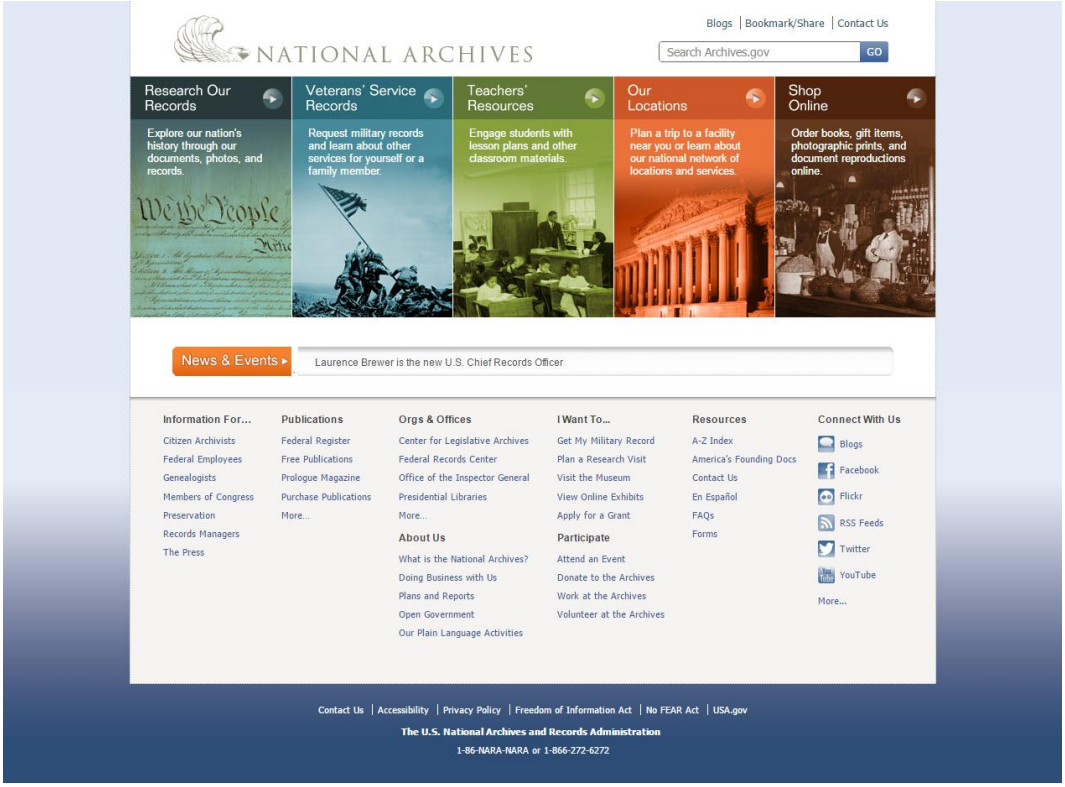

Figure 1.2. Website of The National Archive of the USA.

The National Archives and Records Administration (NARA) keeps only those Federal records that are judged to have continuing value—about 2 to 5 percent of those generated in any given year. By now, they add up to a formidable number, diverse in form as well as in content. There are approximately 10 billion pages of textual records; 12 million maps, charts, and architectural and engineering drawings; 25 million still photographs and graphics; 24 million aerial photographs; 300,000 reels of motion picture film; 400,000 video and sound recordings; and 133 terabytes of electronic data. All of these materials are preserved because they are important to the workings of Government, have long-term research worth, or provide information of value to citizens.

Web: http://www.archives.gov/

The National Film and Sound Archive of Australia

The national audiovisual collection holds more than 2.16 million works. The collection includes films, television and radio programs, videos, audio tapes, records, compact discs, phonograph cylinders and wire recordings. It also

encompasses documents and artefacts such as photographs, posters, lobby cards, publicity items, scripts, costumes, props, memorabilia, oral histories, and vintage equipment.

The NFSA aims to develop a collection that has enduring cultural significance. Our curatorial staff guide the acquisition of new material, and the way it is documented and presented.

Korean Film Archive[14]

Korean Film Archive (KOFA), the only Korean organization that collects and archives film-related data, is searching for visual data of Korea. The Korea War and going through hard history, many films produced in Korea have gone missing. Total number of films produced in Korea is about 5,500, and we have lost about 40% of them, exactly 2,036 pieces of work. KOFA is doing its best to search for Korean films that may be hidden somewhere around the world.

American Memory[15]

American Memory provides free and open access through the Internet to written and spoken words, sound recordings, still and moving images, prints, maps, and sheet music that document the American experience. It is a digital record of American history and creativity. These materials, from the collections of the Library of Congress and other institutions, chronicle historical events, people, places, and ideas that continue to shape America, serving the public as a resource for education and lifelong learning.

Several of the American Memory collections have associated archival finding aids. These finding aids have usually been developed to guide users of the physical collection, organized into boxes and folders. The finding aids have been marked up in XML following the Encoded Archival Description (EAD) standard. They may be viewed as framed and unframed HTML and printed as PDF; the HTML and PDF versions are generated from the EAD XML.

[14] Web site: http://www.koreafilm.org/main/main.asp
[15] Web site: http://memory.loc.gov/ammem/index.html

Search features and information characteristics of foreign electronic archives are shown in Table 1.2.

Table 1.2. Characteristics of some foreign electronic archives

Name of archives	Characteristics
The National Archives of Great Britain www.nationalarchives.gov.uk/	Search multiple directories (databases). An opportunity to specify the subject headings to find them while searching. Search results: in the form of a list of records to a brief description of the name of the catalog (database). Full description of the records in the form of several key fields. View digital copies if available.
The National Archives of the USA https://aad.archives.gov/aad/ Access to Archival Databases (AAD)	Navigating by the subject headings. Ability to search in a particular fond or inventory. View digital copies if available.
The National Archives of the USA https://www.archives.gov/research/catalog/ Access to Archival Databases (AAD)	Search results in a list of a hierarchical tree. Sort the results, saving, printing, mailing. View digital copies if available Search by the authority records of the original owners
Library of Congress http://www.loc.gov/	Short and full description of archival records, MARC21 descriptions. Ability to save the recording, sending by e-mail.
French National Archives http://www.archivesnationales.culture.gouv.fr Digitized images of archival documents (ARCHIM)	View digital copies if available.
Libraries and archives of Canada http://www.collectionscanada.gc.ca	Search by type of material, by level (fonds / collection, a series of documents, etc.)

Russia Archives of Federal Archival Agency http://www.rusarchives.ru/	Search: -by archive sites Runet (on 84 sites, search robot "Fleksum") -on site "Archives of Russia". Search results are grouped by archive sites with the ability to go to the archives sites. The results of the search in the State Archive of Saratov region is a guide to the funds. Description of the Fund include: Fund Name, abstract, stock number, the number of inventories of the fund, the number of fund units of storage, date. There are a variety of archival references, divided into two general groups: -by federal archives, -by regional archives.

The conclusion of the first chapter

In this chapter the following research work were done:

- the terms relating to archives of film and photo were defined;
- the requirements to electronic archive systems were set;
- the history and fond of Central State Archive of FPSR were studied;
- Foreign electronic archives were analysed.

The main conclusions of the analysis of foreign electronic archives

1. All resources are present simple and advanced search tips when searching. Often, advanced search is carried out in the fields of records with the need to specify the type of search (all words, one of the words exact phrase).
2. Almost all resources support:
    - Navigation structure funds (fund inventory, business).
    - View composition and description of the Fund, describing the inventory.
    - Using authority records to the original owners.
    - Search for specific funds, inventories.
3. Some resources support:
    a. View digital copies if available.
    b. Sort search results by relevance, by major field records (name, date, name of the creator, and others.)
    c. Save, print, mailing.
    d. Specifies the number of entries displayed on a page.

Search results are presented in tabular form and in a hierarchical tree with the ability to view a detailed description of the recording.

Chapter II. The tasks of digitizing and cataloging of film and photo

2.1. Requirements for digitization and storage of film and photo

Practically all archives around the world are by now involved with digitisation of their collections on a smaller or larger scale. This is mostly driven by the perceived need of improving access to archival materials and disseminating them in new ways. In some projects (e.g., in tropical climate areas) the aim is also “digitisation for preservation”, i.e., creation of archival digital copies that can, in principle, replace the paper original if it deteriorates rapidly. Automation of finding aids and digitisation of collections usually go hand in hand in archives, and the digitised materials are made available via the created on-line catalogue. Whether electronic records will still be renderable in the future depends, in the first place, on the media on which they have been stored. Electronic records are best stored on durable preservation media. The preservation media must be capable of storing data for the long-term and may not deteriorate all too quickly.

The lifespan of storage media is usually examined on the basis of tests, whereby the ageing process is speeded up and where the number of errors on the aged storage media are measured. The lifespan of the storage media is subsequently forecast on the basis of these tests, and on the assumption that the medium is stored under good conditions. An error-detection and error-correction system is taken into account in this regard. After all, an error-detection and error-correction system exists for every type of storage medium. These mechanisms can repair errors on the storage medium up to a certain level, so that the electronic files remain readable. The number of correctable errors does, however, have an upper limit. Computer files become unreadable once this threshold is exceeded. The lifespan tests give a good indication of the expected life expectancy of the storage medium, but they are in themselves no guarantee for the readability of the records in the long-term.

Scanning photographs

Digital image files can be created to serve as surrogates for a range of document types. Source material can include, but may not be limited to, the following:

- Printed text;
- Book illustrations;
- Rare or damaged printed text;
- Manuscripts;
- Maps, architectural drawings;
- Graphics;
- Works of art on paper;
- Photographic transparencies and negatives;
- Microformats.

Scanning from the original will ensure the highest quality image file. When multiple copies of an item exist, scan from the best copy available, whenever possible. The use of an intermediate, such as a slide, transparency, microfilm, or photocopy, will introduce another step in the imaging process, increasing the complexity of the workflow, and lowering the quality of the resulting image. It may also affect the accuracy of subsequent image processing, such as the use of Optical Character Recognition (OCR) programs. Quality and processing applications will be particularly compromised if the intermediate itself is poorly produced, damaged, or in deteriorated condition. If an intermediate is used, ensure that it has been prepared according to established standards and is in good condition, free of scratches, dust, light damage, and distortions.

Required image parametres are shown in Table 2.1.

Table 2.1. Photographs - prints - black-and-white, monochrome, and color - reflection scanning

Format - Original	Recommended Image Parameters	Alternative Minimum
Format range: • 8”x10” or smaller *Size range:* • o Smaller than or equal to 80 square inches	*Pixel Array:* • 4000 pixels across long dimension of image area, excluding mounts and borders *Resolution:* • Scan resolution to be calculated from actual image dimensions – approx. 400 ppi for 8”x10” originals and ranging up to the appropriate resolution to produce the desired size file from smaller originals, approx. 570 ppi for 5”x7” and 800 ppi for 4”x5” or 3.5”x5” originals *Dimensions:* • Sized to match the original, no magnification or reduction *Bit Depth:* • 8-bit grayscale mode for black-and-white, can be produced from a 16-bit grayscale file • 24-bit RGB mode for color and monochrome (e.g. albumen prints or other historic print processes), can be produced from a 48-bit RGB file *File Format:* • TIFF 5 & 6	*Pixel Array:* • 3000 pixels across long dimension for all rectangular formats and sizes • 2700 pixels by 2700 pixels for square formats regardless of size *Resolution:* • Scan resolution calculated from actual image dimensions – approx. 2100 ppi for 35mm originals and ranging down to the appropriate resolution to produce the desired size file from larger originals, approx. 600 ppi for 4”x5” and 300 ppi for 8”x10” originals *Dimension:* • File dimensions set to 10” across long dimension at 300 ppi for
Format range: • Larger than 8”x10” and up to 11”x14” *Size range:* • o Larger than 80 square inches and smaller than 154 square inches	*Pixel Array:* o 6000 pixels across long dimension of image area, excluding mounts and borders *Resolution:* • Scan resolution to be calculated from actual image dimensions – approx. 600 ppi for originals approx. 8”x10” and ranging down to approx. 430 ppi for 11”x14” originals *Dimensions:*	

	• Sized to match the original, no magnification or reduction *Bit Depth:* • 8-bit grayscale mode for black-and-white, can be produced from a 16-bit grayscale file • 24-bit RGB mode for color and monochrome (e.g. albumen prints or other historic print processes), can be produced from a 48-bit RGB file *File Format:* • TIFF 5 & 6	rectangular formats and to 9”x9” at 300 ppi for square formats *Bit Depth:* • 8-bit grayscale mode for black- and-white, can be produced from a 16-bit grayscale file • 24-bit RGB mode for color and monochrome (e.g. collodion wet-plate negative, pyro developed negatives, stained negatives, etc.), can be produced from a 48-bit RGB file *File size:* • TIFF 4, 5& 6, JFIF/ JPEG, KPCD
Format range: • Larger than 11”x14” *Size range:* • Equal to or larger than 154 square inches	*Pixel Array:* • 8000 pixels across long dimension of image area, excluding mounts and borders *Resolution:* • Scan resolution to be calculated from actual image dimensions – approx. 570 ppi for originals approx. 11”x14” and ranging down to the appropriate resolution to produce the desired size file from larger originals *Dimensions:* • Sized to match the original, no magnification or reduction *Bit Depth:* • 8-bit grayscale mode for black-and-white, can be produced from a 16-bit grayscale file • 24-bit RGB mode for color and monochrome (e.g. albumen prints or other historic print processes), can be produced from a 48-bit RGB file *File Format:* • TIFF 5 & 6	

For stereograph images and other multiple image prints, modified recommended scanning specifications are to scan to original size (length of both photos and mount) and add 2000 pixels to the long dimension, in the event that only one of the photographs is requested for high-quality reproduction. For example, if the stereograph is 8” on the long dimension, a resolution of 500 ppi would be required to achieve 4000 pixels across the long dimension for that size format; in this case, adding 2000 pixels to the long dimension would require that the stereograph be scanned at 750 ppi to achieve the desired 6000 pixels across the long dimension.

For photographic prints, size measurements for determining appropriate resolution are based on the size of the image area only, excluding any borders, frames, or mounts. However, in order to show that the entire record has been captured, it is good practice to capture the border area in the master scan file. In cases where a small image is mounted on a large board (particularly where large file sizes may be an issue), it may be desirable to scan the image area only at the appropriate resolution for its size, and then scan the entire mount at a resolution that achieves 4000 pixels across the long dimension.

Film preservation

Film preservation is a relatively new activity for libraries, museums, and archives. Documentaries, newsreels, avant-garde and independent works, home movies, industrial films, political ads, scientific footage, anthropological records, travelogues, and fictional narratives—these works stand as the collective memory of the first century witnessed by the moving image. By saving and sharing these works, we can illuminate our common heritage with the power and immediacy unique to film.

Film stock comes in different widths created for different markets. The width, generally called the gauge, is measured from edge to edge and expressed in millimeters – 35mm, 16mm, and 8mm.

For each film gauge there is a family of like-gauged equipment and supplies designed to work together. Manufacturers make the film stock with

holes (known as perforations), usually along the edges, to advance the film strip through the sprockets of same-gauged cameras and projectors.

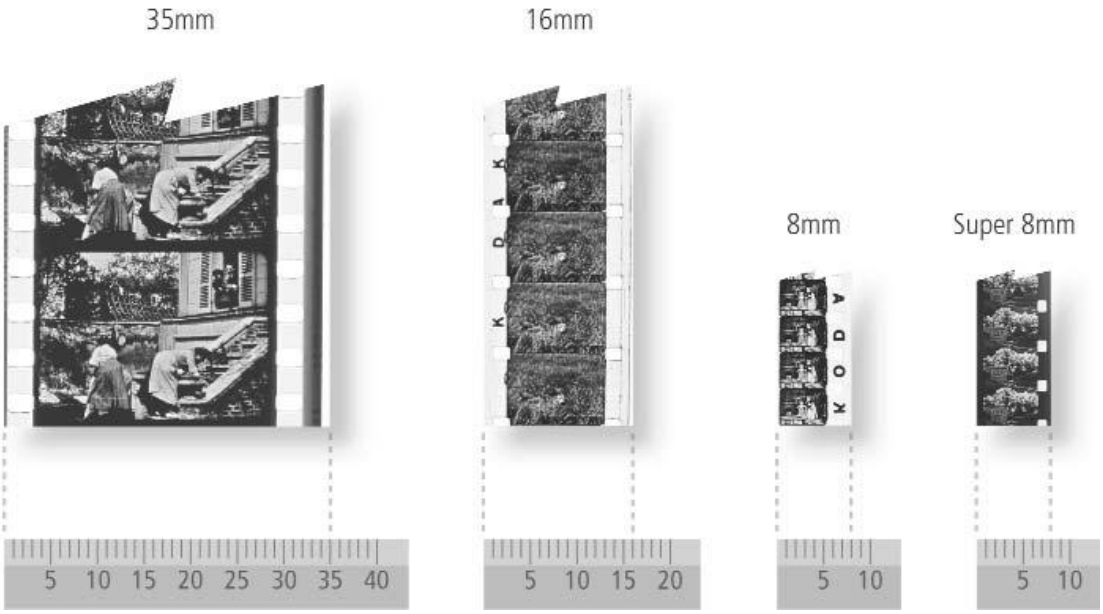

Figure 2.1. Film comes in different widths, called gauges. The width is measured in millimeters.

In the photographic process that creates moving pictures, the film element that captures the image in the camera is the negative. The negative is developed and printed to make a positive for projection.

While the first exhibited films were in black and white, filmmakers soon found ways to add color to their works. During the early years of the motion picture, color was sometimes painted on prints by hand, often with a stencil.

Early innovators strove to integrate sound, like color, in the motion picture viewing experience. Sound tracks can be found on 35mm, 16mm, Super 8mm, and occasionally 8mm prints. A viewing positive with a sound track is called a composite print. Before the advent of digital technology, sound tracks came in two types: optical and magnetic. Most optical tracks are photographically exposed directly onto the film during printing. In projection, light passing through the track is read and translated as sound. Optical tracks appear along the edge of the film as either high-contrast wavy lines (variable area) or a gray stripe of varying darkness (variable density).

In commercial filmmaking, before sound is added to the print it is often stored as a separate film element, tape, or electronic file. Collections acquired

from filmmakers and film-producing organizations may include 35mm or 16mm mag films used in production. These elements, sometimes called full-coat mags, have a dull-brown magnetic recording layer covering one side of the film surface. Similarly, filmmakers and preservationists may put the optical sound track on separate track-only reels.

Storage Conditions. If your storage environment does not adequately protect film materials, your organization has several ways to make improvements. The choice depends on collection size, availability of resources, frequency of use, and institutional commitment to preservation.

Cold storage vaults. For large and medium-size collections the best solution is often an insulated cold storage room with humidity control and air circulation. Image Permanence Institute (IPI) recommends a desiccant-based dehumidification unit that will control humidity for the entire storage area. With this arrangement, no additional desiccants are needed in the packaging of individual films. It is important that the walk-in cold room be used solely for storage and not do double duty as work space. Many repositories protect the security of their cold storage areas with a locked door or security system.

Figure 2.2. Cold storage vault, set at 40°F and 30% RH, with films shelved horizontally.

Refrigerators and freezers. Small media collections can be accommodated in off-the-shelf frost-free freezers or refrigerators. A major challenge in using freezers and refrigerators is protecting film from high humidity during storage. This can be achieved by careful packaging.

Off-site storage. A third option is to rent storage space from a commercial vendor. A number of North American firms operate film storage facilities – some underground and others in climate-controlled buildings. By geographically

separating film materials, they gain extra protection in case one location is destroyed by flood, earthquake, fire, or other disaster. Remote storage is viable only for materials that are infrequently consulted.

Places not to store film:

1. Basements (often have high humidity) or on the floor;
2. Attics (hot in summer and have fluctuating temperature throughout the year);
3. In direct sunlight or next to a window;
4. Near heaters, radiators, or sprinklers;
5. Near chemical, paint, or exhaust fumes;
6. For magnetic sound tracks, near magnetic fields such as those produced by heavy-duty electrical cables, electrical equipment, and transformers.

2.2. Electronic archive creation models and standards

Similarly to libraries, archives in many countries have begun defining requirements and tendering for digital archive systems software. Film and photography preservation has also been redefined by digital technologies. Records management is important to institutions, corporations, and governments, no matter what their size. Records management is the establishment of systematic controls over the creation, use, maintenance, and disposition of recorded information. Many archivists, particularly those in small archives, think of records management as a complex activity pursued by multinational corporations or large governments, not by a small municipality, the community hospital, or the school board. It is true that larger institutions often suffer more than smaller ones from inefficient record-keeping, backlogs of inactive records, and ineffective filing and retrieval procedures. However, establishing an adequate records management programme when an institution is small and manageable can help keep the organization's record-keeping practices from becoming complex and unwieldy over time.

Records management helps an organization or government ensure:

- the retention of records needed to meet administrative and operational requirements;
- the retention of records needed to meet legal requirements;
- the permanent retention of records of archival value;
- the effective creation, retrieval, and maintenance of current records;
- the security of vital records;
- the regular, authorized destruction of obsolete records;
- the improved flow of information throughout an organization.

Electronic record in archive system is formed from digital object and record (Fig.2.3).

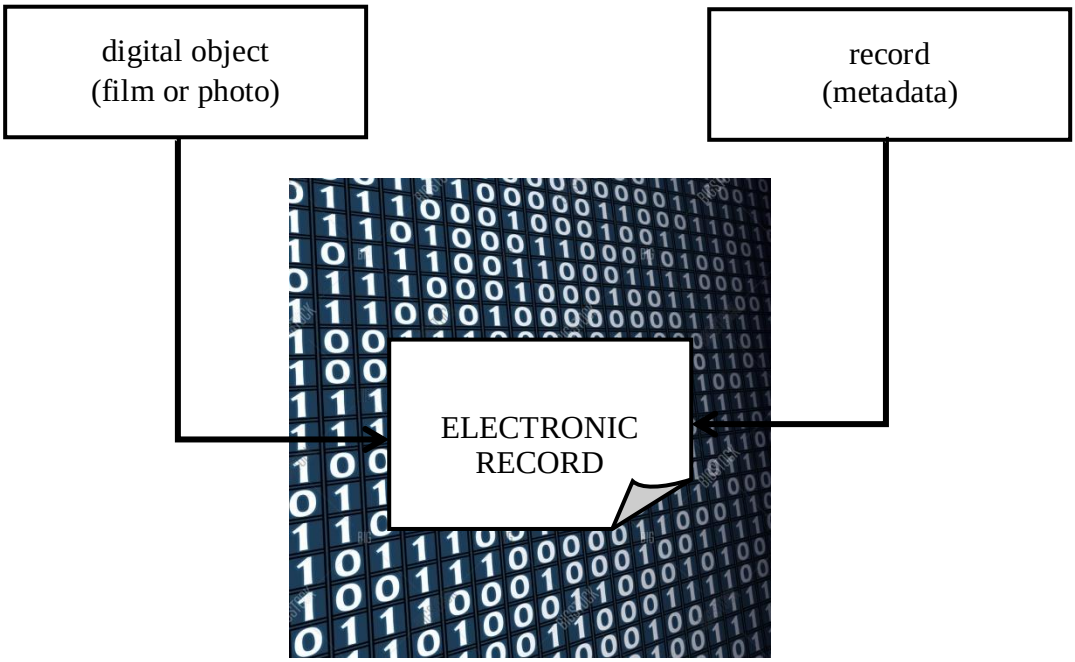

Figure 2.3. Electronic record of electronic archive

An architecture of electronic archive is based on client-server model (Fig.2.4). Users of electronic archive are divided into groups and each group has its own access rights.

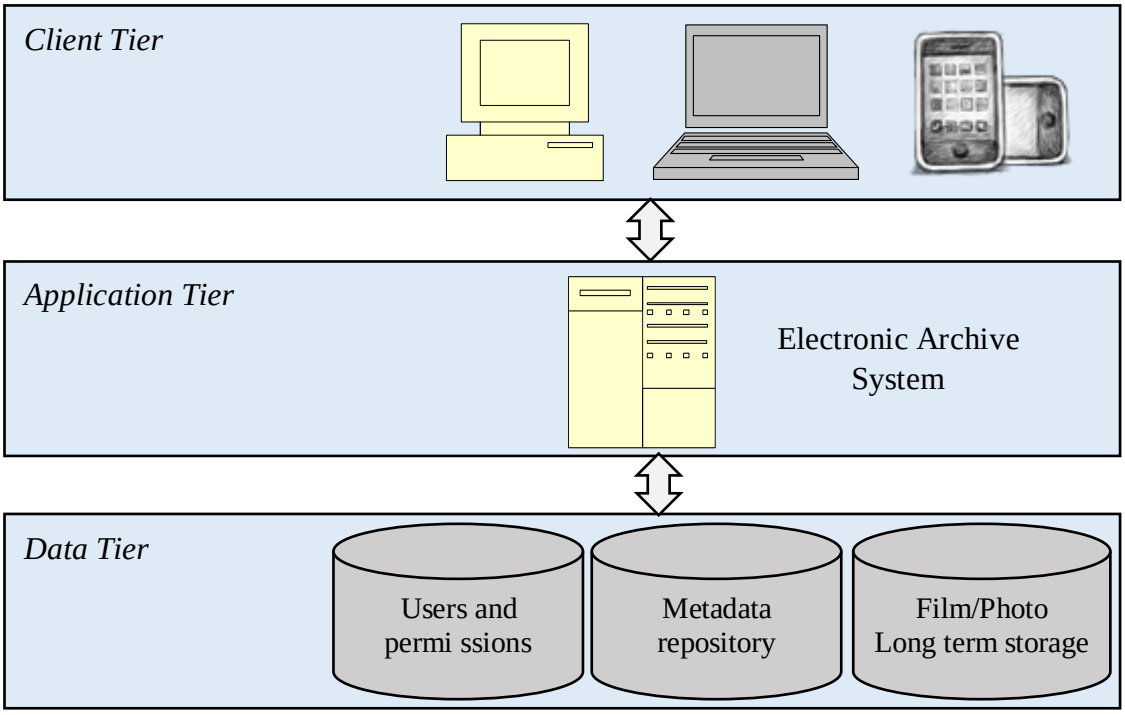

Figure 2.4. Tiers of electronic archive management

The creation model of electronic archive of film and photo is shown in Figure 2.3. There are several parts:

- Accessioning Workbench (Preparing objects);
- Archive Repository (Database);
- Reference Workbench (Retrieval);
- Electronic (Archival) Catalogue;
- Order Fulfillment System;
- Subscription (to collections using email).

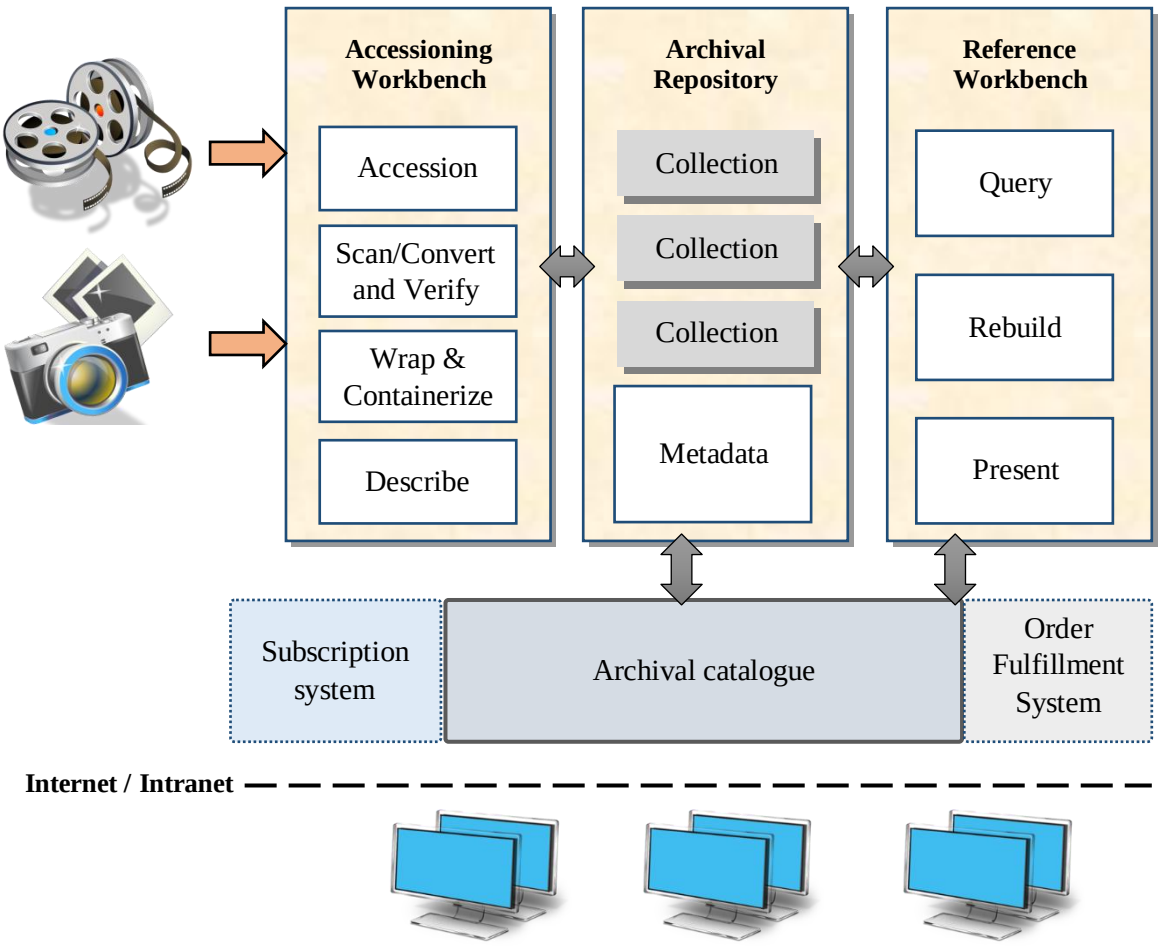

Figure 2.3. Electronic Archives: Virtual Workspaces.

Standards for electronic archives of film and photo

Here is a definition of the standard given by The British Standards Institution, the oldest organization for standardization (1901): "In essence, a standard is an agreed way of doing something. It could be about making a product, managing a process, delivering a service or supplying materials – standards can cover a huge range of activities undertaken by organizations and used by their customers. It is a published document that contains a technical specification or other precise criteria to be used systematically as rules, guidelines or definitions. Standards help to make life easier and increase the reliability and efficiency of products and services that we use"[16]. The benefits of standards listed above can be added ensuring compatibility.

[16] The British Standards Institution (BSI) http://www.bsigroup.com/en-GB/standards/Information-about-standards/what-is-a-standard/

EAD

Title: EAD • Encoded Archival Description

Creator: Encoded Archival Description Working Group of the Society of American Archivists Network Development and MARC Standards Office of the Library of Congress

Publisher: Society of American Archivists

Date of publication: 2002

Identifier: http://www.loc.gov/ead/ead.xsd (W3C scheme)

Copyright: Society of American Archivists. [Open standard]

Description: scheme for encoding archival inventories. It is also used to describe collections

Content: description of archival collections and coding documents

Link: http://www.loc.gov/ead (EAD web site)

ISAD(G)

Title: ISAD(G): General International Standard Archival Description, Second Edition

Creator: Committee on Descriptive Standards (ICA/CDS)

Publisher: International Congress on Archives (ICA)

Date of publication: 2000

Identifier: 0-9696035-5-X (ISBN)
http://www.icacds.org.uk/eng/ISAD(G).pdf

Copyright: International Congress on Archives Copyright

Description: general rules of archival description, which can be used irrespective of the form or carrier of archival material. These rules contain 26 elements that can be combined to describe the unit of archival storage.

Content: archival description

Link: http://www.ica.org

ISAAR (CPF)

Title: ISAAR (CPF) • ISAAR (CPF): International standard archival authority record for corporate bodies, persons and families, Second Edition

Creator: ICA Committee on Descriptive Standard

Publisher: International Congress on Archives (ICA)

Date of publication: 2004

Identifier: 2-9521932-2-3 (ISBN)

http://www.icacds.org.uk/eng/ISAAR(CPF)2ed.pdf

Copyright: International Congress on Archives Copyright

Description: general rules for the creation of archival authority records to descriptions of organizations, individuals and families who may be the values of the "Creator" field in the description of archival documents.

Content: archival description

Link: http://www.ica.org

MARC

Title: MARC • MAchine-Readable Cataloguing MARC 21 Concise

Format for Bibliographic Data

Creator: Network Development and MARC Standards Office of the Library of Congress

Publisher: Library of Congress

Date of publication: 2002 (updated)

Identifier: http://www.loc.gov/marc/bibliographic/ecbdhome.html

Copyright: [Open standard]

Description: standard for the representation and transmission of bibliographic information in machine-readable form

Content: bibliographic descriptions

Link: http://www.loc.gov/marc/authority/ecadhome.html (Authority Data);

http://www.loc.gov/marc/holdings/echdhome.html (Holdings Data);

http://www.loc.gov/marc/classification/eccdhome.html (Classification Data)
http://www.loc.gov/marc/community/eccihome.html (Community Information)

MODS

Title: MODS • Metadata Object Description Schema

Creator: Library of Congress' Network Development MARC Standards Office

Publisher: Library of Congress

Date of publication: 2008 (version 3.3)

Identifier: http://www.loc.gov/standards/mods/v3/mods-3-3.xsd

Copyright: [?]

Description: XML schema for the set of elements of bibliographic records that can be used for different purposes, especially for library systems

Content: bibliographic description

Link: http://www.loc.gov/standards/mods/

METS

Title: METS • Metadata Encoding and Transmission Standard

Creator: McDonough, Jerome (et al)

Publisher: Digital Library Federation

Date of publication: 2007 (Version 1.7)

Identifier: http://www.loc.gov/standards/mets/mets.xsd

Copyright: Копирайт Digital Library Federation

Description: XML Schema - a standard for encoding descriptive, administrative and structural metadata about the objects stored in the digital library.

Content: digital library

Link: http://www.loc.gov/standards/mets/mets-schemadocs.html

DUBLIN CORE

Title: Dublin Core • The Dublin Core Element Set Version 1.1

Creator: Dublin Core Metadata Initiative

Publisher: Dublin Core Metadata Initiative

Date of publication: 1999

Identifier: http://dublincore.org/documents/1999/07/02/dces/

Copyright: [Open standard]

Description: Dublin Core - a simple set of metadata that focuses on discovery of electronic resources. Metadata elements may be divided into groups: content - coverage material; description, type, relation; source, subject, title; intellectual property rights - contributor, creator, publisher, rights; detail - date, format, identifier, language. Government several European countries (e.g., The United Kingdom) and the world (e.g., Australia) gave a mandate to the use of this standard.

Content: search for resources.

2.3. Cataloguing rules of films

In museums, libraries, and archives, description is the key to managing film and photo collections. Description captures essential information about the film and photo's physical characteristics and content and provides a textual link between the item and the user. In cultural repositories, a basic form of description is cataloguing.

Cataloguing film: common data elements

- Identification/call number
- Title
- Alternate title(s)
- Date(s) of production
- Producer/photographer
- Other credits
- Gauge/format
- Film stock
- Element
- Type of film element
- Color characteristics (color or black and white)

- Sound characteristics
- Length
- Running time (in minutes)
- Physical condition
- Summary
- Genre
- Accompanying material

A key data element is the unique identification number that distinguishes an item from all other collection materials. Methods for assigning identification numbers vary with the repository. Libraries, for example, often assign a call number based on the Dewey Decimal Classification. Museums typically use a catalog number derived from the item's accession number. In an archive the film identification number is often tied to the collection in which a film belongs. Some film repositories also incorporate data on shelving location into the accession number.

The following section addresses cataloguing film materials (magnetic/optic, VHS, DVD etc.) using the rules found in AACR2 Chapter 7 (Motion Pictures and Videorecordings) and MARC 21 Format for Bibliographical Data:

1. Chief Source of Information

The chief source of information for films, in order of preference, is:

- the item itself - the title frames and credits
- the container and container labels, if an integral part of the piece -- the disc or film (reels)

2. Leader

The leader/06 (type of record) character position should be coded "g" for projected medium.

3. 006 Fixed-length Data Elements -- Additional Material Characteristics

The category of material should be coded “m” for electronic resource. Code other values as appropriate.

4. 007 Fixed-length Data Elements - Physical Characteristics

Table 2.2. Physical Characteristics

MARC	OCLC	Subfield	Code
007/00	$a	category of material	v=videorecording
007/01	$b	specific material designation	d=videodisc
007/03	$d	color	b=black & white
			c=multicolored
007/04	$e	videorecording format	v=DVD
			s=Blu-ray
			z=HD DVD
007/05	$f	sound on medium or separate	a=sound on same medium as film
007/06	$g	medium for sound	i=videodisc
007/07	$h	Dimensions	z=other
007/08	$i	Configuration of playback channels	m = mono. Sound
			s = stereo. Sound
			q = four or more channels
			k = mixed configuration

5. 041 Language Code

Code for the language(s) of the main content, including

- Spoken language
- Written language (including subtitles, captions, and intertitles)
- Original language

Example:

```
041 $a uzb
```

6. Title and Statement of Responsibility Area

Transcribe the title information and statement of responsibility from the chief source of information.

```
245 00 $a Ordenli O`zbekiston $n №42 $h [videorecording]
245 00 $a Wiggles. $p Racing to the rainbow $h [videorecording] / $c Hit Entertainment.
```

7. Edition Area

Many film titles are or have been available in various versions including widescreen, standard, or extended version. The edition statement in the 250 field is used to distinguish these various versions.

```
250 $a Special ed.
250 $a Standard version.
```

8. Publication, Distribution, etc. Area -- Dates in Field 260

Copyright date on surface

```
260 ##$c14.11.1942.
```

9. Physical Description Area – Extent of Item

Use "videodisc" or "videocassette" or "DVD" as the specific material designation (SMD) in the 300 field subfield (a).

9.1. *Field 300 - specific material designation*

300 $a 1 videodisc (66 min.) : $b sd., col. ; $c 4 3/4 in. + $e 1 booklet ([10] p. : col. ill. ; 20 cm.)

Notes used with the above example would include:

538 $a DVD.

500 $a Booklet features pieces by critic David Ehrenstein, screenwriter David Sherwin, and director Lindsay Anderson.

9.2. Series Area

Some phrases that would be used as series statements:

490 1 $a Five star collection

830 0 $a Five star collection.

9.3. Notes Area

Information for notes is often taken from the container as there is a great deal of information on the containers.

9.3.1. Languages:

546 $a English and Uzbek audio tracks, only English subtitles

9.3.2. Audio Description / Descriptive Video Captioning:

546 $a Audio-described.

9.3.3. Statement of Responsibility.

Cast should be given in MARC 21 field 511. Other individuals that should be credited (those listed in the second guideline) are given in MARC field 508. Others deemed important that do not fit in a cast or credits note may be given in MARC field 500.

511 1 $a Vivien Lee, Simone Signoret, Jose Ferrer, Lee Mervin, Oskar Werner, Elizabeth Ashley,

George Segal, Jose Greco, Michael Dunn, Charles Korvin, Heinz Ruehmann, Lilia Skala.

511 0 $a Narrator, Julie Andrews ; voices, Jeff Bennett, Kevin Lima, Teala Dunn.

508 ##$aProducer, Joseph N. Ermolieff ; director, Lesley Selander ; screenplay, Theodore St. John ; music director, Michel Michelet.

9.3.4. Edition and History.

Make notes relating to the edition being described.

500 $a Music has been changed for this home entertainment version. Some episodes may be edited from their original versions.

500 $a Based on the play by Michael Hastings.

Make notes relating to the history of the film, including dates for the original production, regardless of format.

500 $a Originally produced as a documentary film in 2004.

9.3.5. Publication, Distribution, etc. and Date.

Make notes on publication, distribution, etc. details not included in the publication, distribution, etc. area that are considered to be important.

500 $a Originally produced and copyrighted in 1981.

9.3.6. Physical Description.

Sound. Make notes on any special characteristics of sound components. Information relating to the sound content can often be found on the container.

500 $a Mono. sound.

500 $a Dolby digital 5.1 sound, stereo.

Can be combined with language notes: 546 $a Soundtracks: English (stereo.), French (mono.).

System Requirements. Because of its importance, the systems requirement information may be given in the first note position. The MARC 21 field for system requirements, field 538, is used for the name of the format and any additional physical information that might control the user‘s choice of playback equipment.

538 $a Requires a DVD player.

Other.

500 $a Dual-layer format.

500 $a Aspect ratio 2.35:1

500 $a Original film in widescreen; reproduced using pan-and-scan technique.

9.3.7. Audience Rating Code – 521

521 ##$aFilm created for geographers, planners, geologists, meteorologists and others who have a professional interest in analyzing spatial data.

521 1#$a009-012.

[The interest level is that for ages 9-12.]

9.3.8. Summary Note

520 $a Tamaraxanum na torjestvennom zasedanii, posvyashennaya 60-letiyu so dnya rojdeniya Yakubovskogo.

520 $a Mr. Bean can't believe his luck when he wins a camcorder and an all-expense paid vacation to the French Riviera. However, during his train journey to the south of France, he falls face first into a series of mishaps and fortunate coincidences, all of which are caught on camera and far-fetched enough to ensure his own makeshift entry into the Cannes Film Festival.

9.3.9. Informal Contents Note

500 $a Special features include outtake musical numbers, newsreel excerpts, theatrical trailers and cast interviews.

500 $a Includes 2005 documentary on the making of the film (50 min.) hosted by Stephen Spielberg.

9.4. International Standard Numbers

9.4.1. ISBN

020 $a 1419845284

020 $a 9780323045049

9.4.2. UPC (Universal Product Code) and EAN (International Article Number)

024 3 $a 9780025895578

024 1 $a 085391112990

9.4.3. Manufacturer's Number

028 41$a 59326 $b Warner Bros. Entertainment

(Note, added entry – searchable)

028 42 $a 59326 $b Warner Bros. Entertainment

(Note, no added entry – not searchable)

Full example of MARC21 record of film is given Appendix B.

2.4. Cataloguing rules of photographs

The process of producing metadata about images is not new. We all have done this by writing brief description on the front or back of a photograph. In today's digital world, this process is just updated so that we can provide more and more descriptive information which can travel with the file no matter where it goes. Why is this important? Adding descriptive metadata to a digital image allows us to take advantage of existing technologies that can read and extract that metadata, allowing others to search for our images. It is also helpful when

an image comes back to archive, from a researcher or general public, in determining its original source and location. The more standardized and useful information we put into the metadata, the more searchable these images.

This paragraph offers recommendations for assigning MARC 21 codes to bibliographic descriptions for photographic resources.

1. Leader designations

1.1. Type of record (Leader 06)

Use value `k`, two-dimensional nonprojectable graphic.

1.2. Bibliographic level (Leader 07)

Use the value `m` (monograph/item) for single items or multipart resources.

Use the value `a` (monographic component part) for analytics (single items physically part of a larger resource).

Use the value `d` (subunit) for single items contained in larger groups or collections that have their own catalog record.

1.3. Type of control (Leader 08)

Use `a` if photograph is archival document

1.4. Encoding level (Leader 17)

For full-level description all applicable guidelines are followed and Leader 17 is blank.

For minimal-level description the Leader 17 value is `7`.

1.5. Descriptive cataloging form (Leader 18)

Use the value `a`.

2. Physical description (Fixed field 007)

Codes for positions 00 (Category of material), 01 (Specific material designation), and 03 (Color). If applicable, also code position 04 (Primary support material), and, optionally, 05 (Secondary support material) using the MARC 21 007 code list for nonprojected graphics.

```
007 kv zoc
```

(Comment: A toned albumen print cabinet card)

```
007 kv bo
```

(Comment: photographs, in black and white, on paper)

3. Cataloging source codes

Language of cataloging in subfield $b.

Apply the cataloging code in the 040 subfield $e for graphic materials. For example: dcrmg or dacs

```
040 ##$b uzb $e dcrmg
```

4. Name main entry (Fields 100, 110)

```
110 1 $a UzTAG.
```

```
100 1 $a Pun, G., $e photographer.
```

5. 245 field: Title statement

```
245 00 $a Samarkand. $h [graphic].
```

6. 246 field: Variant form of title

Record variant titles by which a photo may be known if it differs substantially from the 245 title statement and provide a useful access point.

7. 260 field: Publication, distribution, production, etc.

```
260 $c 30.11.1963
```

```
260 $a Samarkand, $c between 1850 and 1890
```

8. 300 field: Physical description

Extent. Give the extent by counting or estimating the number of items, containers or physical carriers the group contains.

```
300 $a 2 photographs
```

```
300 $a 1 album
```

```
300 $a 357 prints
```

```
300 $a 17 albums
```

```
300 $a 12 cartons, 3 oversize boxes
```

Other physical details. Record additional physical characteristics of material as appropriate to the materials, local policy, and cataloger's expertise.

300 $a 2 boxes of photographs : $b prints, chiefly albumen

300 $a ca. 12,185 photographs in 13 containers : $b color and black and white prints, negatives, and slides

Dimensions. Optionally, provide details of the dimensions of the items and/or their containers. Generally, record dimensions in terms of height x width. Always specify what was measured. When materials are of more than two sizes, give the dimensions of the largest followed by the words "or smaller."

300 $a 20 photographs in 1 box : $b prints ; $c box 12 x 26 x 35 cm.

300 $a 4 albums ; $c albums 32 x 24 cm.

Format. Optionally, provide details of the predominant format of the material.

300 $a 2 boxes of photographs : $b chiefly albumen prints on card mounts ; $c 17 x 12 cm (cabinet card format)

300 $a ca. 2,500 negatives in 5 boxes ; $c negatives 13 x 11 cm (4 x 5 format)

9. 351 field: Organization and arrangement

Describe the way in which materials have been subdivided into smaller units or the order in which particular units have been arranged.

351 $a Organized in three series: 1. Professional life. 2. Travel. 3. Family.

351 $a Items are arranged chronologically.

10. 4XX fields: Series statement

Do not use. If series titles of items in the group are significant, trace them in the appropriate 7XX field. A note supporting the tracing may also be provided.

```
500 $a Collection contains several series of stereographs, but most are from the Watkins' Pacific Coast series.

700 1 $a Watkins, Carleton E., $d 1829-1916. $t Watkins' Pacific Coast.
```

11. 5XX fields: Notes

Inclusion of a variety of notes will help provide collective context to the materials being described. It is particularly important to describe the contentsof the group in a 505 contents note and/or a 520 summary note, as described below. The order of notes presented below is recommended based on archival collection-level cataloging practice.

11.1. 500 field: General note

Always make a note on the source of the title proper.

```
500 $a Collective title devised by cataloger.

500 $a Collection title specified by donors in their instrument of gift.

500 $a Title from photographer's logbook.

500 $a Includes photographic prints, cartes de visite, cabinet cards, negatives, prints, and a few photomechanical reproductions.
```

11.2. 545 field: Biographical or historical note

Provide biographical or historical information about the individual or organization referenced in the 1XX or 245 field.

545 0 $a John Elliott Patterson was a forest entomologist with the US Bureau of Entomology, an amateur ornithologist, and an amateur photographer. He first worked in the Pacific Northwest (1913-1929), then in California at the Berkeley Forest Insect Laboratory. In 1950 he retired to Ashland, Oregon. (Comment: Group of ca. 800 photographic prints by an amateur photographer)

545 $a The San Francisco Call and the San Francisco Bulletin merged in 1929 to form the San Francisco Call Bulletin. The San Francisco News, published by the Daily News Co., merged with the San Francisco Call Bulletin to form the San Francisco News-Call Bulletin in 1959.

(Comment: Archive of ca. 395,000 photographs taken by staff photographers of the San Francisco News-Call Bulletin and its predecessors)

11.3. 520 field: Summary, etc.

Summary notes are narrative, free-text statements of the scope and contents of groups. Details may include forms of materials, dates of subject coverage, and the most significant topics, persons, places, or events.

520 $a Na snimke: peredoviki smeny kommunisticheskogo truda sernokislotnogo cexa Zubaydulla Baratov, Tamara Abroskina, nachalnik smeny Karom Raxmatov i Xaydar Rustamov.

11.4. 524 field: Preferred citation

Use to provide a specific citation format for citing the material.

11.5. 541 field: Immediate source of acquisition

Record the immediate source from which the repository acquired the material unless this information is confidential.

11.6. 544 field: Location of other archival materials

When the group forms part of an archival collection, and portions of the same collection are known to be elsewhere, record the name and location of custodians.

```
544 $n Related sound recordings are in the Alan Lomax CBS Radio Series Collection (AFC 1939/002), American Folklife Center, Library of Congress.
```

11.7. 555 field: Cumulative index/finding aids note

Specify the existence of any separate finding aid or similar control material. Use a standard bibliographic citation if applicable. An external electronic finding aid may be linked to from this field, if permitted by the local system.

```
555 0 $a Finding aid available in the archive and online.
```

11.8. 580 field: Linking entry complexity note (i.e., Relationship note)

Use this note to state the relationship between the materials described and a broader collection of which it is a part. Use only when parts of the collection are being described in separate records.

12. 7XX fields: Added entries and linking entries

Types of added entries considered useful for various types of materials include: creators of collections, names of collections, author/title headings, etc.

13. 856 field: Electronic location and access

Use to specify the location or means of access to an electronic finding aid prepared for the group or for other reasons, such as to point to scanned items or digital images.

```
856 42 $3Finding aid $uhttp://example.uz/archive/4482
```

The conclusion of the second chapter

Following work was done in this chapter:

- Requirements for digitization and storage of film and photo were defined;
- Photograph scanning parameters and requirements were studied;
- Information accordingly film preservation and storage was given;
- Film and photo cataloguing metadata field was listed;
- Electronic archive standards were analysed;
- Electronic archive creation models were made.

Chapter III. Functional and organizational aspects of creation of electronic archive of film and photo

3.1. Functional and organizational structures of electronic archive

An electronic archive consists of the following functionalities (Figure 3.1):

- input subsystem,
- interface,
- a user and group subsystem,
- a role subsystem,
- record and file databases,
- a metadata subsystem,
- a searching subsystem,
- a reporting subsystem
- an export service,
- output subsystem.

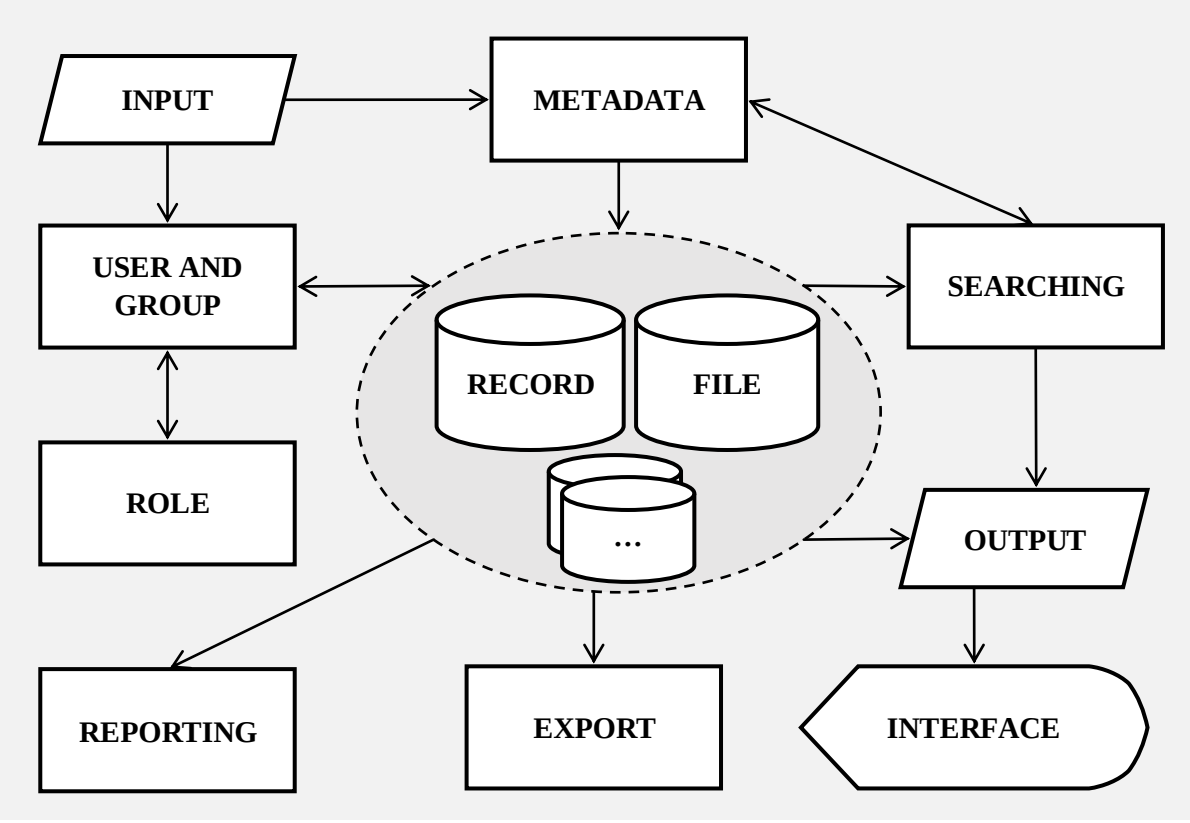

Figure 3.1. Functional structure of an electronic archive.

This scheme represents electronic archive subsystems and the relationship between them. *Input* defines creation of databases and interfaces, as well as the formation of databases. *User and group* subsystem is used for the registration of users and defining access rights. This information is stored in database tables. Special metadata list, for example MARC21 fields and worksheet is created in *Metadata*. Electronic catalog formation is performed by this subsystem. *Searching* is used for information retrieval in electronic archive. Algorithm of this process is given in Figure 3.3.

Organizational structure of electronic archive

Electronic archive should be implemented in the Central State archive. Thereafter the training of staff to use the system is conducted. Must remember that the staff should be able to work on a computer that is to have computer literacy. Table 3.1 shows the staff responsibilities on formation of an electronic archive.

Table 3.1. Staff duties.

№	Staff	Duties
1.	Director	Control of other departments; Give decrees; Receive reports
2.	Deputy director	Control of other departments
3.	Accessioning and setting value	Receiving documents form other organisations
4.	Processing, and handling	Technical and scientific processing; Preservation; Convert; Cleaning
5.	Storing	Long-term storage of film and photo
6.	Give access and reference	Give access to users; response to orders
7.	Users	Browse; Search; Order

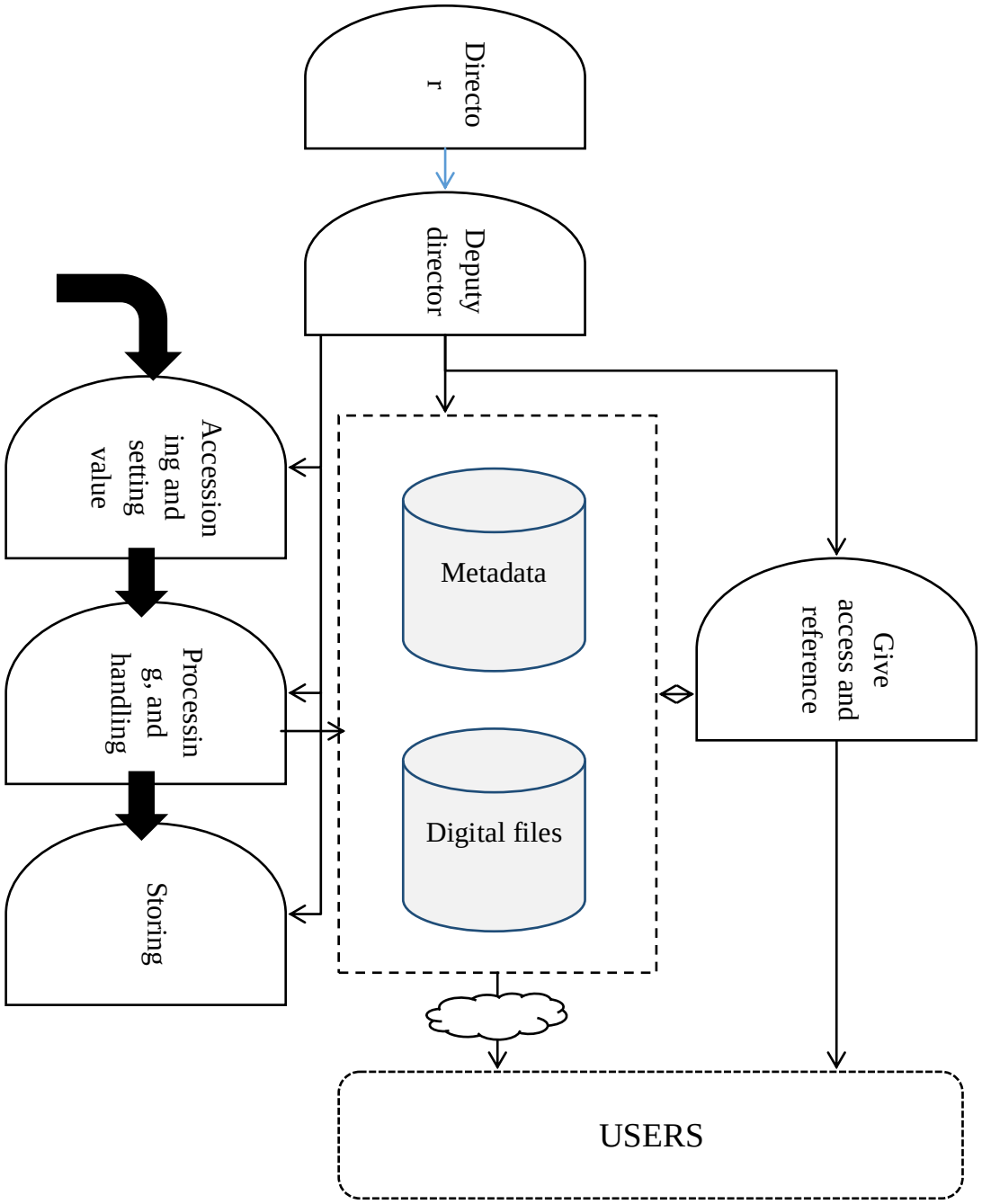

Figure 3.4. Organizational structure of electronic archive creation

This structure describes the departmental relations of Central State Archive FPSR.

3.2. Algorithms of main tasks

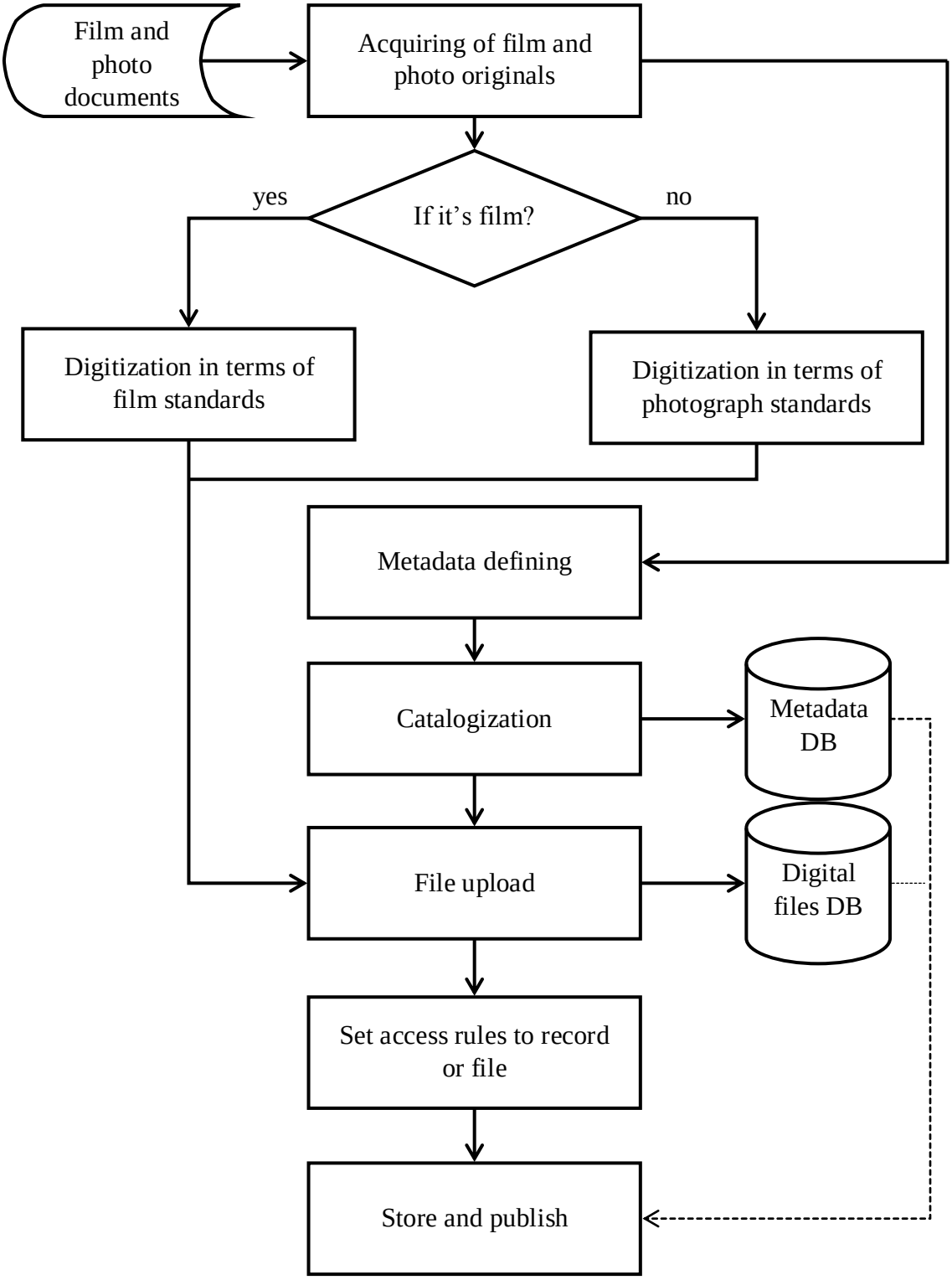

Figure 3.2. Typical workflow of film and photo catalogization.

There are several processes of film and photo catalogization workflow (Fig. 3.2):

1. Acquiring of film and photo originals from other persons or organisations;
2. Then if it's film digitize films in terms of film standards, if it's photography digitize in terms of photo standards;
3. Define metadatas of film or photo;
4. Film and photo catalogization;
5. Uploading the fulltext into database;
6. Setting access rules of documents;
7. Storing and giving access to users.

The search algorithm has the following processes (Fig. 3.3):

1. Begin of algorithm;
2. Input query by user;
3. Searching from database;
4. If records is found suitable to keyword query, show the results. If there is not any result show the message about it;
5. If user requests the print of record system sends record to print;
6. End of algorithm.

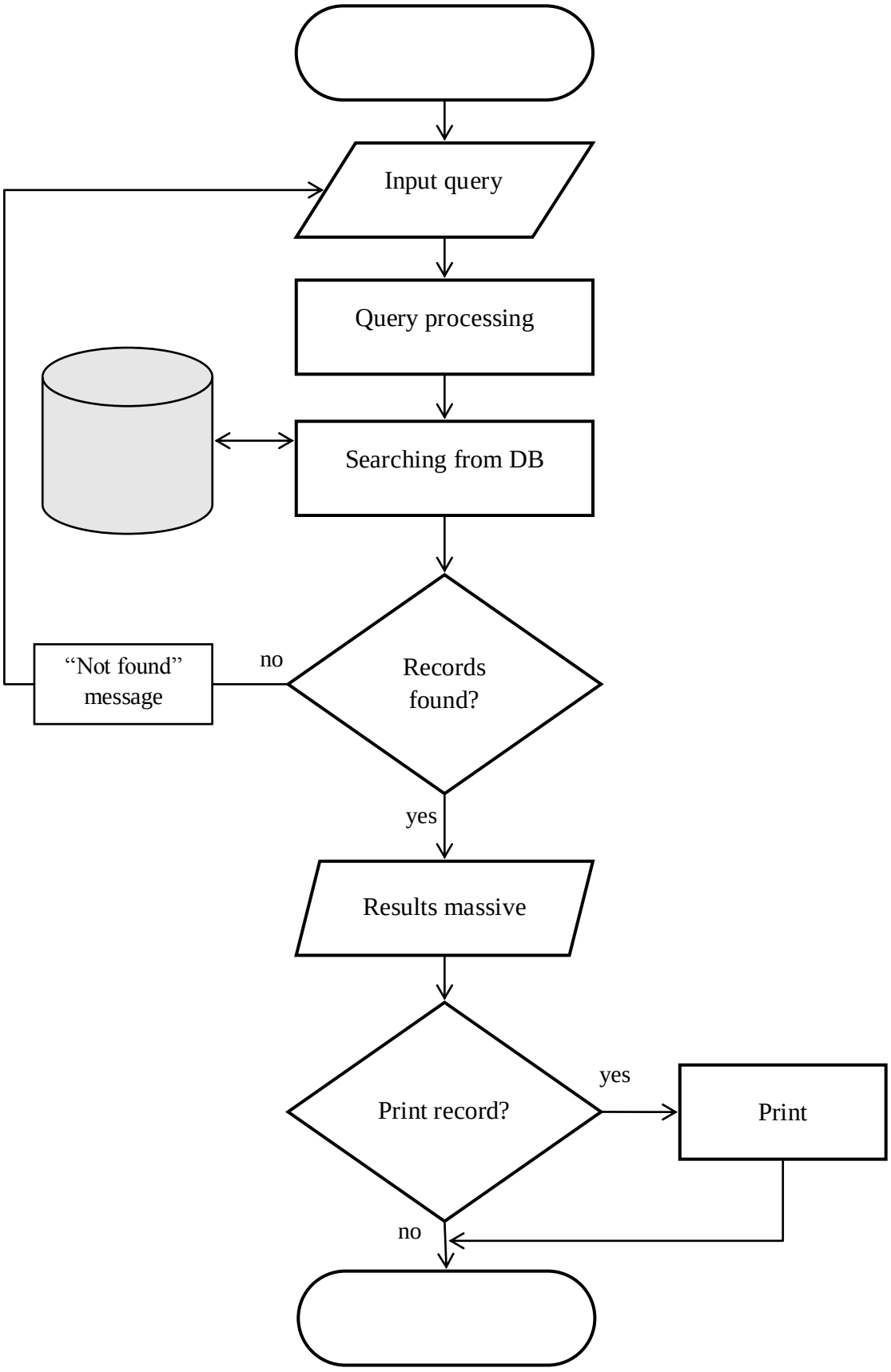

Figure 3.3. Search algorithm of records in electronic archive.

3.3. User guide for electronic archive

We will use ARMAT (library management software) for catalogization of film and photo. Because this system is compatible for these kind of documents. Also its database structure is based on MARC21 metadata standard.

In this guide step-by-step catalogization process is explained.

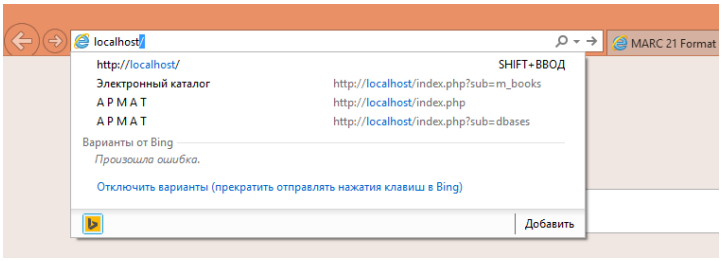

Figure 3.5. Open the software by entering URL (localhost)

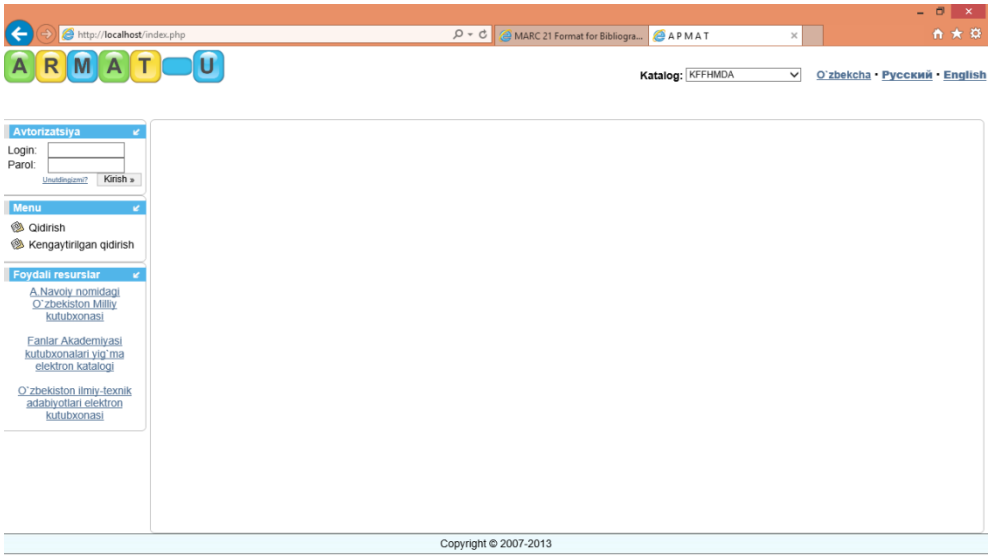

Figure 3.6. Main page of software interface

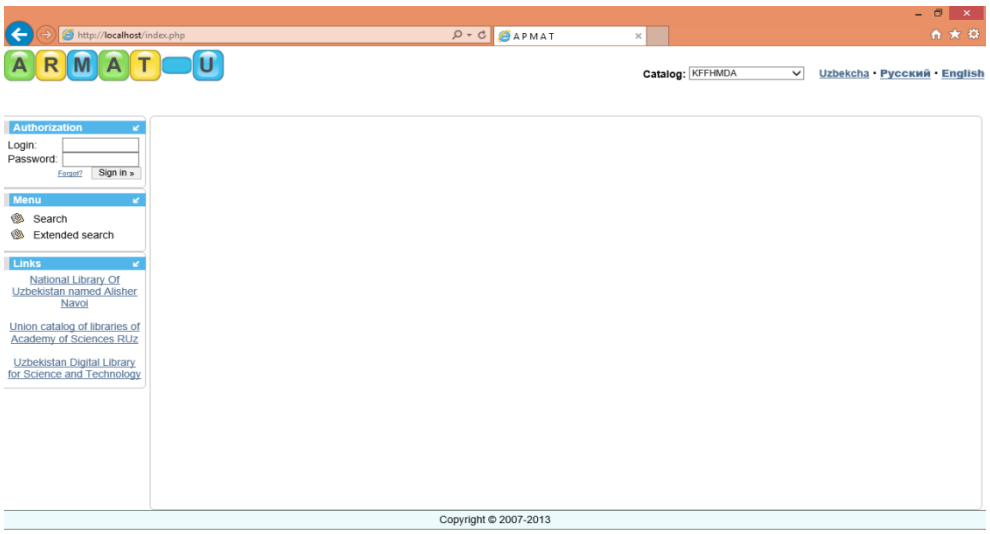

Figure 3.7. Set the language to English

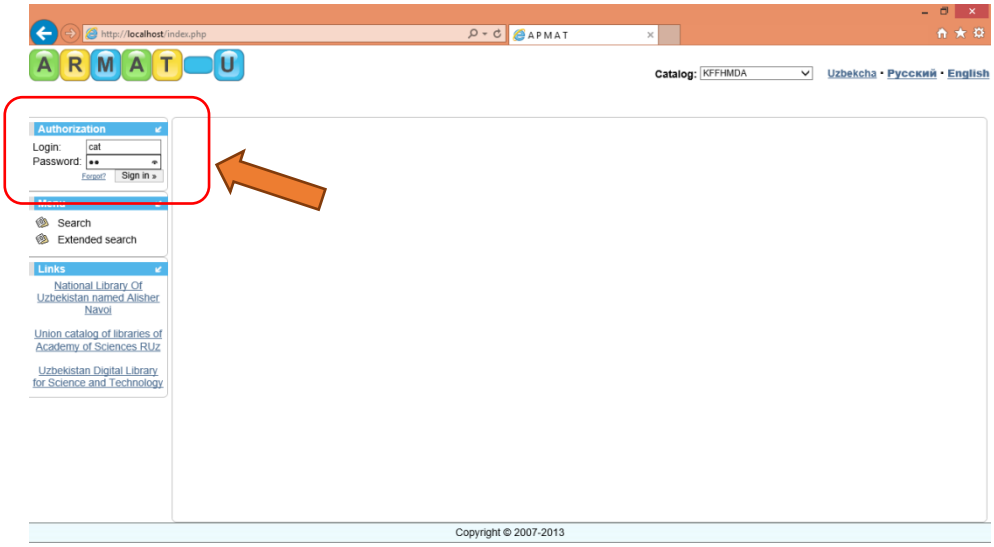

Figure 3.8. Sign into catalogizator workspace

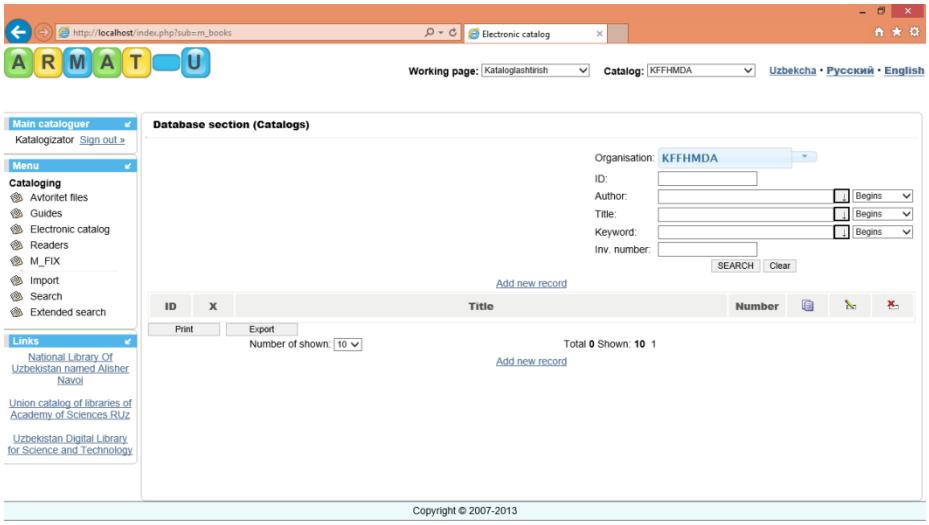

Figure 3.9. Open en electronic catalog page and click on 'Add new record' link.

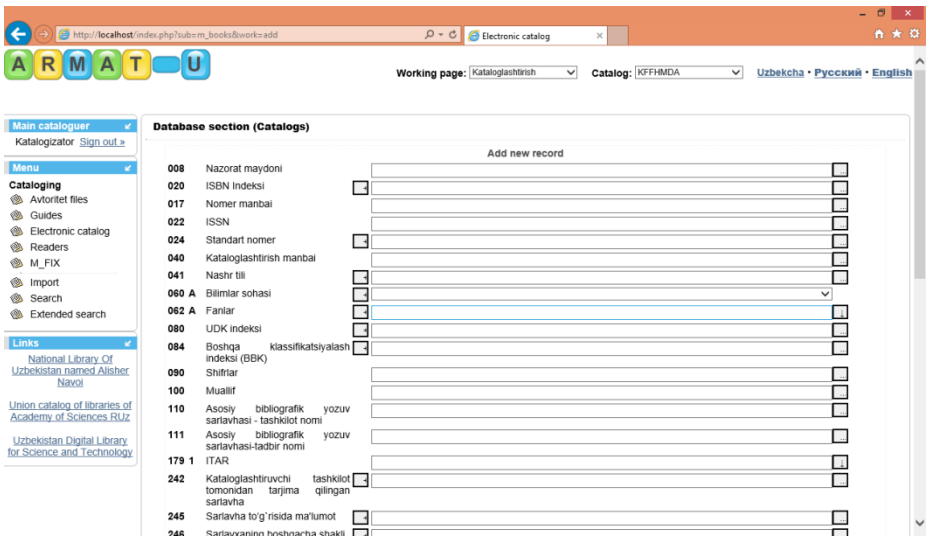

Figure 3.10. Choose the template is 'Catalogization' and start describing the item.

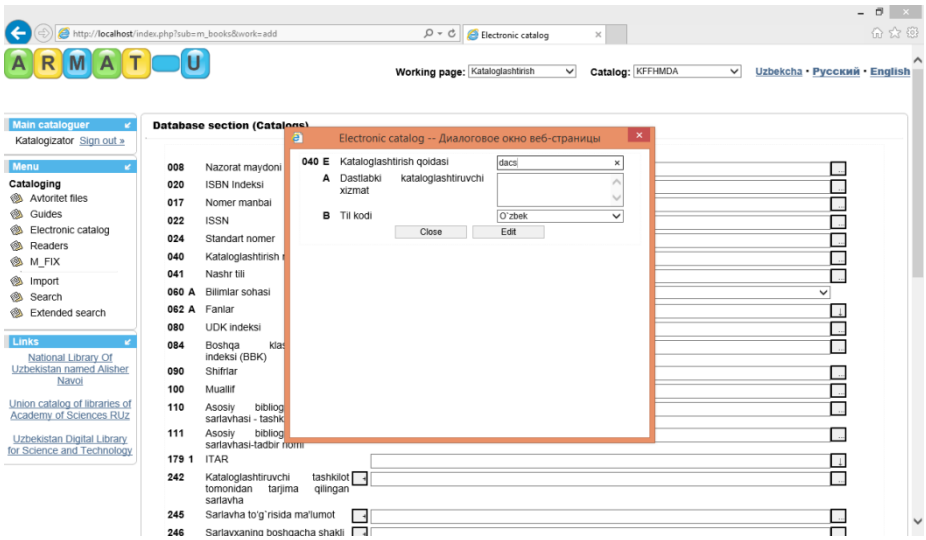

Figure 3.11. Field 040: catalogization source and language.

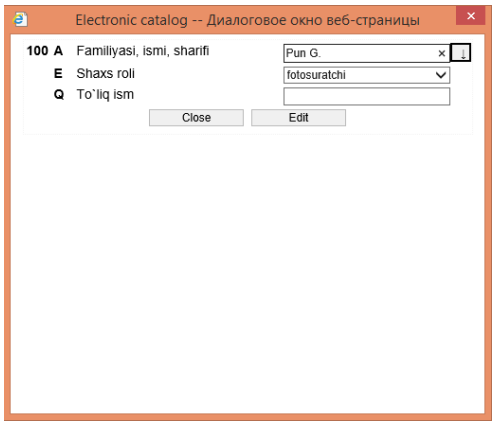

Figure 3.12. Field 100: Main name of creator - photograph.

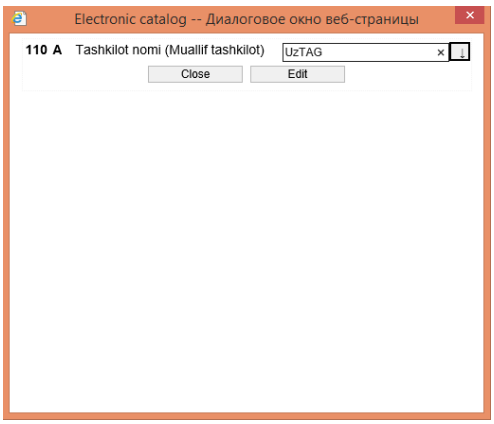

Figure 3.13. Field 110: Main name of organization.

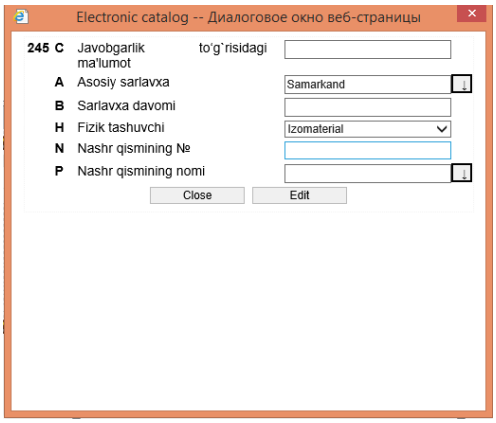

Figure 3.14. Field 245: Title and responsibility.

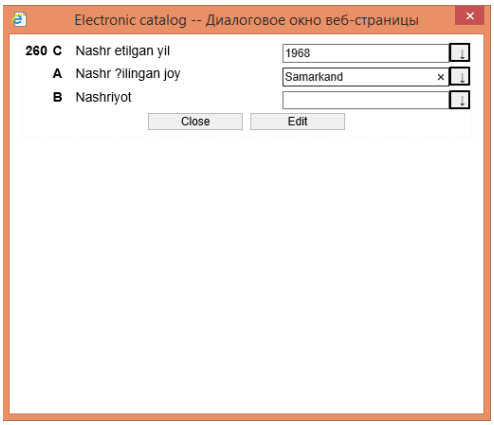

Figure 3.15. Field 260: Publication.

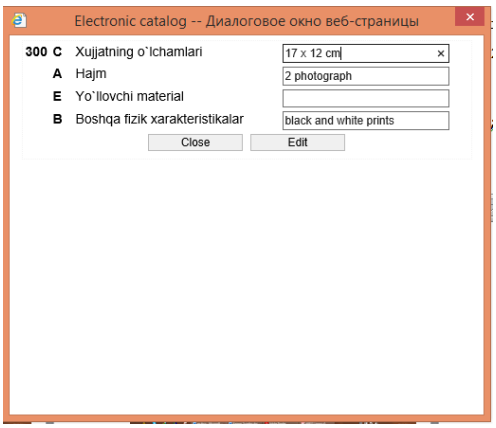

Figure 3.16. Field 300: Physical characteristics

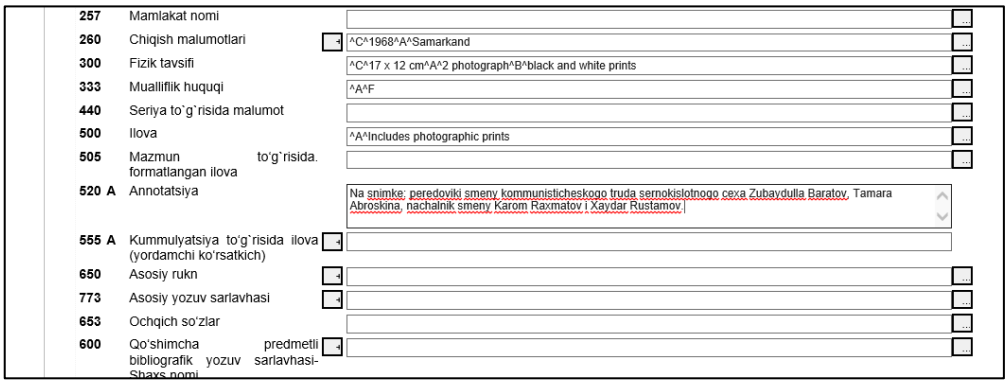

Figure 3.17. Field 520 $a: Description

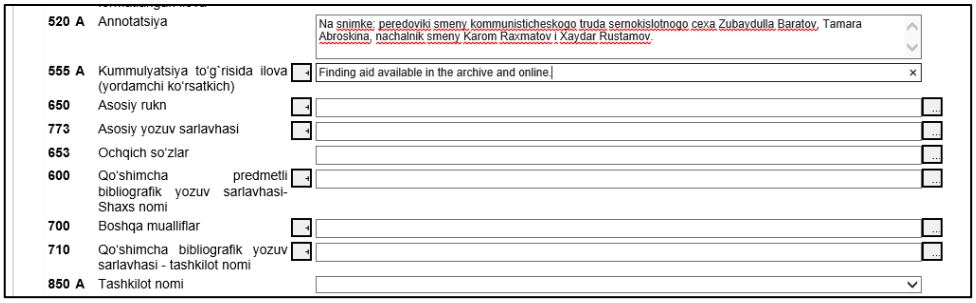

Figure 3.18. Field 555 $a: Cummulation

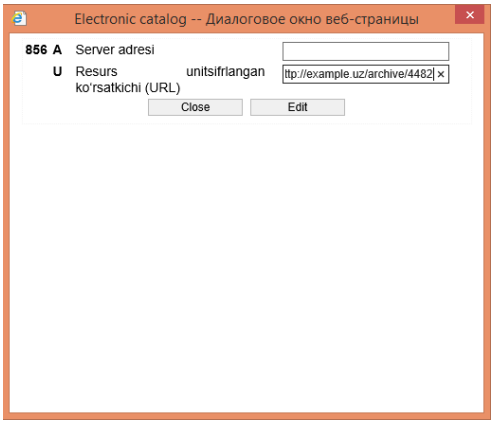

Figure 3.19. Field 856: URL of record.

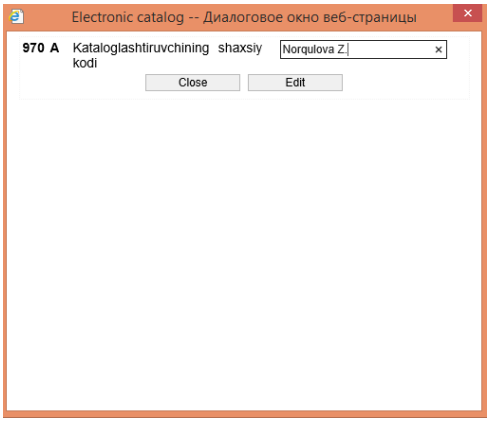

Figure 3.20. Field 970. Catalogizator information.

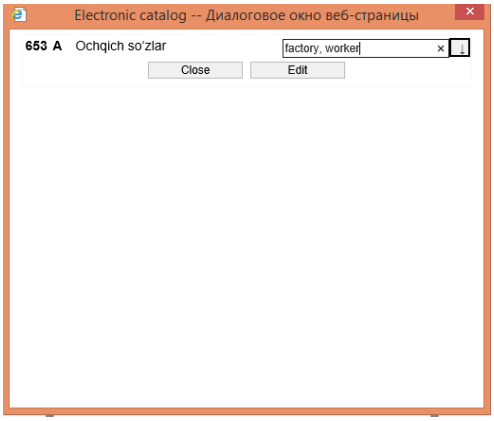

Figure 3.21. Field 653: Keywords or subject.

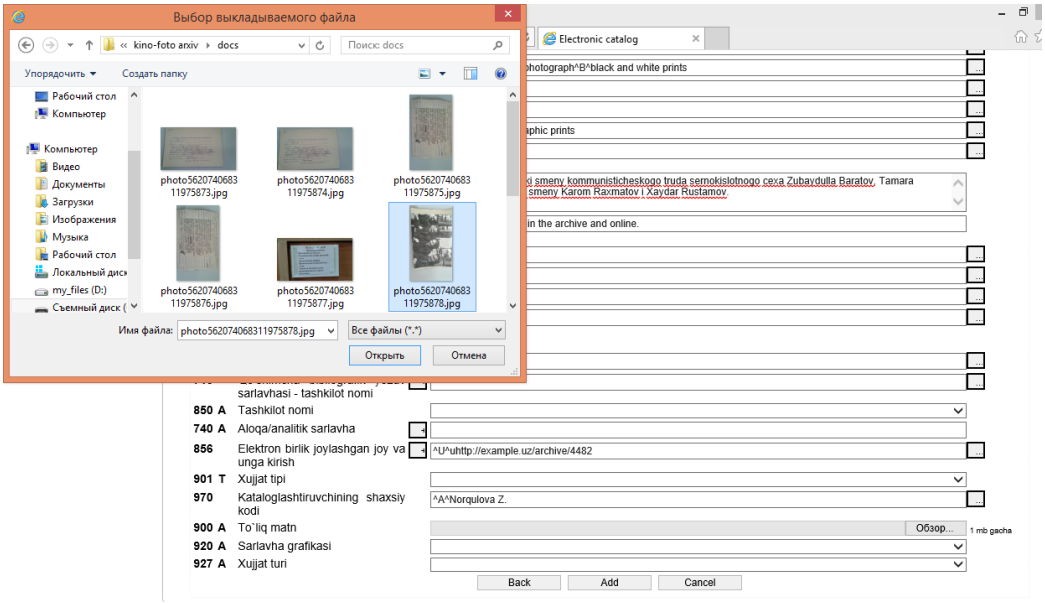

Figure 3.22. Uploading the digital file.

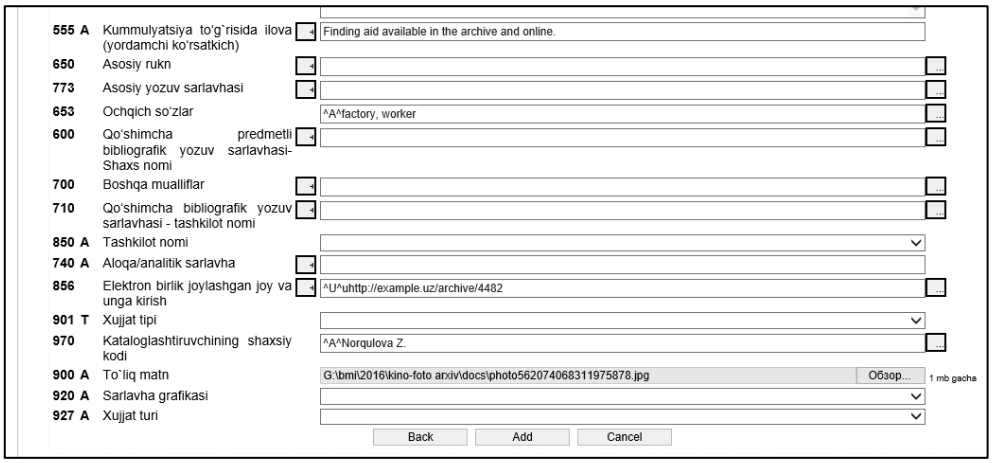

Figure 3.23. At the end click on 'Add' button

Figure 3.24. Record on catalog.

1-20165
Pun G.
Samarkand [Izomaterial] / G. Pun; UzTAG. - Samarkand, 1968. - 2 photograph : black and white prints ; 17 x 12 cm. - Includes photographic prints
Kalit so`zlar: factory, worker
Annotasiya: Na snimke: peredoviki smeny kommunisticheskogo truda sernokislotnogo cexa Zubaydulla Baratov, Tamara Abroskina, nachalnik smeny Karom Raxmatov i Xaydar Rustamov.
Mavjud nusxalari: jami 2, bo`sh nusxalar 2
To`liq matn
photo562074068311975878.jpg
http://example.uz/archive/4482

Figure 3.25. Record for printing.

The conclusion of the third chapter

In this chapter the following works were done:

- The functional structure of an electronic archive system was created;
- Algorithms of main tasks such as catalogization and searching process were developed;
- Organizational structure of electronic archive creation was made;
- User guide of catalogization process was created.

Conclusion

Content-based video and photo retrieval is getting more attention as the volume of digital video grows dramatically. Digital archiving offers several challenges, but isn't a long way off. However, one must be aware that there are no solutions out of the box for electronic record keeping. Digital archiving is all about developing and implementing an efficient electronic record keeping system. Procedures and technology are the core of such a system. When developing a record keeping system, one has to keep in mind that procedures and technology have to be implemented in the right perspective.

Archival science must provide the leading guidance in tackling the problems involved with the long-term preservation of electronic records. Especially the identification of the records and their appraisal are the keystones for every record keeping procedure. Defining exactly what has to be preserved for the long-term, allows a reduction of the problems and makes digital archiving a feasible mission for every organization. Archival science must also be the main basis for the long-term digital preservation strategy for electronic records. One cannot merely rely on technological approaches or solutions alone.

In this dissertation the following works were done:

- The terms relating to archives of film and photo were defined;
- The requirements to electronic archive systems were set;
- The history and fond of Central State Archive of FPSR were studied;
- Foreign electronic archives were analysed.
- Requirements for digitization and storage of film and photo were defined;
- Photograph scanning parameters and requirements were studied;
- Information accordingly film preservation and storage was given;
- Film and photo cataloguing metadata field was listed;
- Electronic archive standards were analysed;

- Electronic archive creation models were made.
- The functional structure of an electronic archive system was created;
- Algorithms of main tasks such as catalogization and searching process were developed;
- Organizational structure of electronic archive creation was made;
- User guide of catalogization process was created.

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Appendix A.

Main international standards on records and archives management

International Organization for Standardization (ISO)	
ISO 15489 (2001)	Records management (Part 1 & 2)
ISO 18492 (2005)	Document Management Applications, Long-term preservation of electronic document-based information
ISO 22310 (2006)	Guidelines for standards drafters for stating records management requirements in standards
ISO 23081 (2006; 2009 and 2011)	Records management processes, Metadata for records (Part 1–3)
ISO 26122 (2008)	Work process analysis for records
ISO/TR 13028 (2010)	Implementation guidelines for digitization of records
ISO 16175 (2010 and 2011)	Principles and functional requirements for records in electronic office environments (Part 1 to 3)
ISO 30300 and ISO 30301 (2011)	Information and documentation, Management systems for records
ISO 13008 (2012)	Digital records conversion and migration process
ISO 14721 (2012)	Space data and information transfer systems - Open Archival Information System (OAIS) - Reference model
ISO 16363 (2012)	Space data and information transfer systems - Audit and certification of trustworthy digital repositories
ISO 17068 (2012)	Trusted third party repository for digital records
ISO/IEC 17826 (2012)	2012 Information Technology/Cloud Data Management Interface (CDMI)
ISO 14641-1 (2012)	Electronic archiving – Part 1: Specifications concerning the design and the operation of an information system for electronic information preservation
International Council on Archives (ICA)	
ISAD(G)	General International Standard Archival Description
ISDIAH	International Standard for Describing Institutions with Archival Holdings
ISDF	International Standard for Describing

	Functions
ISAAR(CPF)	International Standard Archival Authority Record for Corporate Bodies, Persons and Families, Second edition
ICA	Principles of Access to Archives
ICA	Guidelines for developing a retention schedule for records management and archival professional associations, including a model retention schedule
ICA	Code of Ethics for Archivists
Other organizations	
DOD 5051.2	Electronic records (US National Archives)
MoReq2 (European Union)	Requirements for the Management of Electronic Records

Appendix B.

Marc21 description of foreign film.

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000 03411cgm 2200637Ia 4500
006 m d
007 vd cvaizq
007 co ugu
008 010104s1997 xxu127 e vleng d
020 $a0780630211
020 $a9780780630215
024 1 $a794043499722
028 42$aN4997$bNew Line Home Video
041 1 $aeng$bfre$heng
245 00$aSe7en$h[videorecording] /$cNew Line Productions, Inc. ;
produced by Arnold Kopelson, Phyllis Carlyle ; directed by David
Fincher ; written by Andrew Kevin Walker.
246 3 $aSeven
246 3 $a7
250 $aWidescreen letterboxed version.
260 $a[United States] :$bNew Line Home Video,$cc2000.
300 $a2 videodiscs (127 min.) :$bsd., col. ;$c4 3/4 in.
490 1 $aNew Line platinum series
538 $aDVD; Dolby surround stereo; aspect ratio 2.40:1.
538 $aIn order to operate the enhanced PC features of the disc a
DVD-ROM and Windows 95 or higher is required. Some of the DVD's
enhanced features will not work on a Mac.
546 $aEnglish with English and French subtitles available; closed-
captioned.
511 1 $aBrad Pitt, Morgan Freeman, Gwyneth Paltrow, John C.
McGinley.
508 $aDirector of photography, Darius Khondji; editor, Richard
Francis-Bruce; music, Howard Shore.
500 Originally released as a motion picture in 1995.
521 8 $aRated R.
520 $aA psychological thriller about two detectives …
505 0 $aDisc one: (the movie). Four feature-length audio …
830 0$aNew Line platinum series.
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