



# SEPIADES

Cataloguing photographic collections

Edwin Klijn, Yola de Lusetet

European Commission on Preservation and Access

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**Culture 2000**

## European Commission on Preservation and Access

The European Commission on Preservation and Access (ECPA) was established in 1994 to promote activities aimed at keeping collections in European archives and libraries accessible over time. Books, documents, photographs, films, tapes and disks are all subject to decay. The digital revolution has introduced new problems of obsolescence of soft- and hardware. In order to keep our documentary heritage available for future generations of users, large-scale programmes must be developed for its preservation.

The ECPA acts as a European platform for discussion and cooperation of heritage organizations in areas of preservation and access. To promote the exchange of expertise and experience, the ECPA organizes conferences, meetings and workshops.

The ECPA Secretariat is located at the Royal Netherlands Academy of Arts and Sciences in Amsterdam, and has as chair Fernanda Campos, vice-director of the National Library of Portugal.

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## Contents

About this report 5

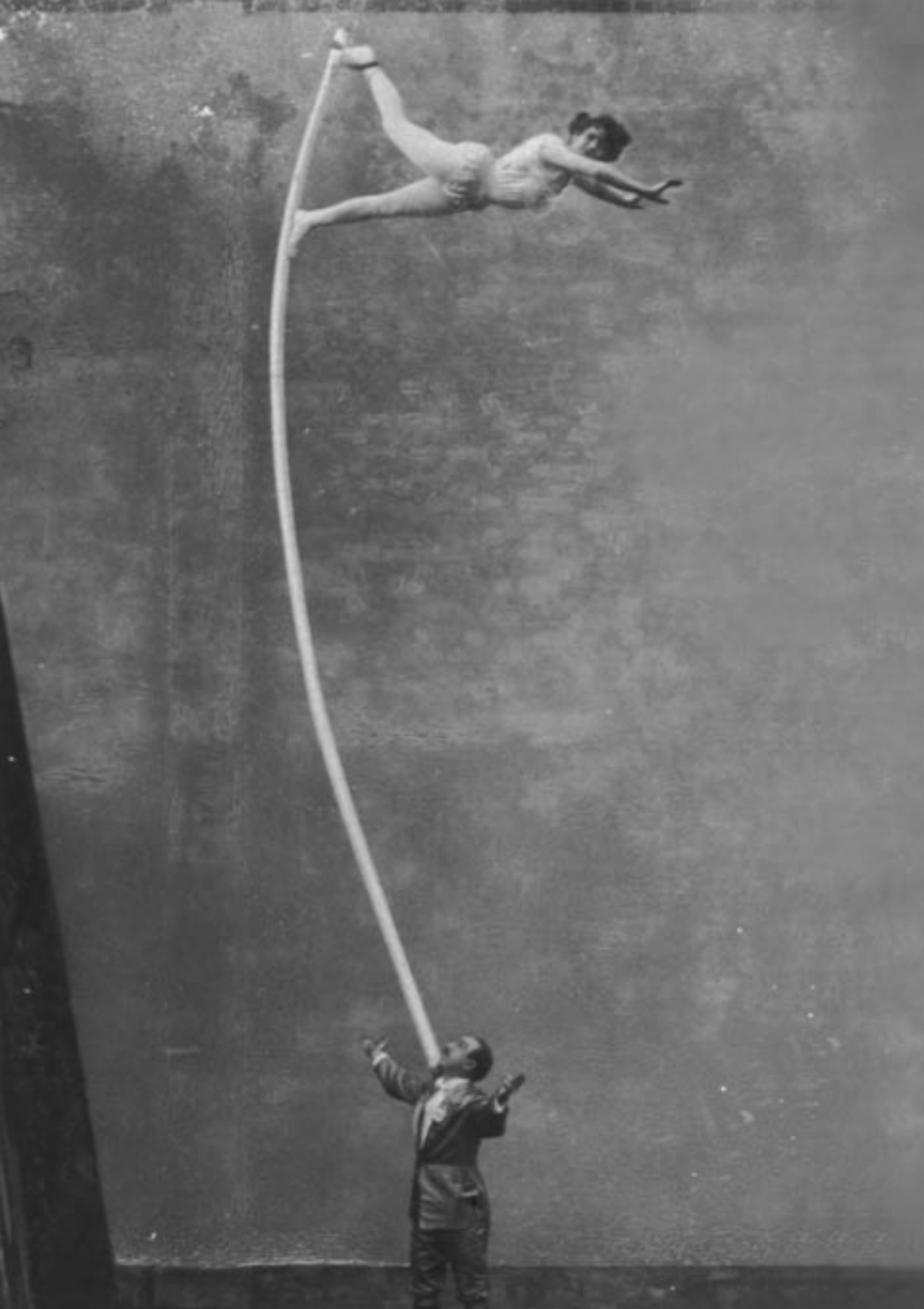
Cataloguing photographic collections 7

SEPIADES: unifying diversity 37

SEPIADES in detail 41

SEPIADES software tool 45

Further references 47



## About this report

This report aims to provide background information on the SEPIADES (SEPIA Data Element Set) advisory report and SEPIADES software tool. Both were developed in the framework of the SEPIA (Safeguarding European Photographic Images for Access) project, an EU-funded project on preservation and digitisation of photographic collections that ran from 1999 until 2003.

SEPIADES is a multilevel data element set to catalogue photographic collections. Apart from 21 core elements, it contains many suggestions for use of specific, detailed elements. This report explains about the motives behind SEPIADES, providing an introduction to both the model and software tool. It is aimed at all those involved in cataloguing photographic collections, both cataloguers and decision makers.

We would like to thank the following persons for their help and kind cooperation: Patricia Alkhoven, Tim Harris, René van Horik, René Kok, Rutger Kramer, Ania Michas, Anne Muller, Mariann Odelhall, Huub Sanders and Paula Witkamp.

Last but certainly not least a cordial thanks goes out to our working group colleagues Kristin Aasbø, Anne Isomursu, Isabel Ortega García and Torsten Johansson, whose enthusiasm and expertise made our three years of cooperation a great and enjoyable undertaking.

Edwin Klijn  
Yola de Lusenet

*Photo previous page: The Morandinis, ca. 1900. Gelatin paper, 129x77 mm. on postcard. F. Ardavin - L. Parish Collection, courtesy of Biblioteca Nacional de España, Madrid*



## Cataloguing photographic collections

A good description is the key to every collection; it makes a photograph visible, for the researcher, the cataloguer or the occasional visitor. It opens up a collection, providing access and enabling users to find what they are looking for. Apart from tools for retrieval, catalogue entries record how a photograph was acquired, its physical characteristics and condition, arrangements about rights, access restrictions, etc.

A catalogue supplies the context of a photograph; the information it provides belongs with the photograph, the photograph and its catalogue entry together form a whole. Catalogues may add extra meaning that cannot be seen in the image itself, or provide vital information to help users understand and interpret what they see. Catalogues improve both the 'searchability' and understanding of photos.

In 1999 the European Commission on Preservation and Access (ECPA)<sup>1</sup> conducted a survey amongst European memory institutions with photographic collections. The 141 institutions that took part in the survey, representing 29 European countries, hold collections from 700 up until 12 million individual items, together around 120 million photographs. Over half of these are 50 years or older; many are seriously at risk, deteriorating through natural degradation and the wear and tear associated with use.<sup>2</sup>

Up until a few decades ago, photographs were frequently neglected. They were often summarily catalogued, as collections rather than items ('this is a box with photographs of...') or not described at all. Storage was not always optimal; for instance, in archives it was not unusual to keep photographs together with paper documents, and some archivists even in the 1980s apparently still held the view 'that photographs as such could not form an archive'.<sup>3</sup>

*Photo previous page: Girl with hat, postcard, anonymous, no date, courtesy of European Commission on Preservation and Access, Amsterdam*

<sup>1</sup> ECPA website, URL: <<http://www.knaw.nl/ecpa/>>

<sup>2</sup> E. Klijn and Y. de Lusenet, *In the picture. Preservation and digitisation of European photographic collections* (Amsterdam, 2000), URL: <<http://www.knaw.nl/ecpa/publ/pdf/885.pdf>>

<sup>3</sup> G. Fioravanti, 'Present Activities and Future Projects of the Italian Center for Photoreproduction, Binding and Restoration (CFLR) in the Field of Archival Photographic Collections Preservation', paper presented at SEPIA conference 'Changing Images. The role of photographic collections in a digital age', Helsinki 18-20 September 2003, URL: <<http://www.knaw.nl/ecpa/sepia/conferencePapers/Fioravanti.pdf>>

## IN THE PICTURE:

# An overview of European photographic collections

'In the picture' sketches the ways in which European institutions manage their photographic collections in terms of preservation and digitisation. The material for the report was collected over a period of 14 months, from December 1998 until February 2000. Data were collected by a questionnaire distributed to well over 300 institutions that hold photographs. About 140 responses were received and they form the basis of this report. In addition, working visits were paid to a number of institutions with significant photographic collections and desk research was carried out to provide a context for the results from the survey.



*Klijn, E., Lusenet, Y. de*  
*ECPA report 11*

*European Commission on Preservation and Access,*  
*2000, vi + 69 pp. ISBN 90-6984-294-7*

The institutions in the survey together hold about 120 million photographs, half of them over 50 years old, and representing a wide variety of different photographic processes. The life span of photographs can be measured in decades rather than centuries, and many of them have now reached such an age that their preservation has become a matter of great urgency.

These are some of the main conclusions:

- Many institutions do not have staff specifically trained in photographic conservation, and expertise in this area seems to be concentrated in relatively few places
  - A wide variety of descriptive models is used for photographic materials
  - The majority of institutions are either engaged on projects for digitising photographs or planning them
  - The main reason for digitisation was protection of vulnerable originals from frequent use
  - The most time-consuming and costly aspect of digitisation projects is the description required to facilitate searching
  - The level of description of the originals is often found to be insufficient for effective searches, and many institutions are facing serious backlogs in the description of their photographic collections that have to be dealt with when digitisation is undertaken
- 'In the picture' can be downloaded at URL: <http://www.knaw.nl/ecpa/publ/pdf/885.pdf> or ordered as a hard copy at the ECPA Secretariat.

With the growing appreciation for photographs, all this has changed. Not only has photography become an immensely popular art form that attracts a large public, in professional circles photographs are now recognized as valuable artefacts and documentary records worthy of study and needing proper care. Memory institutions have begun looking more seriously at their visual holdings, organizing exhibitions and creating digital collections on their websites.

The increasing public demand has not only put the spotlight on the photographs, but also on their catalogues. Both in terms of preservation and cataloguing there are still huge backlogs that need to be dealt with to provide optimal access to photographic collections. Considerable investments have to be made to safeguard the photographs as well as improve their catalogues. As resources are limited, memory institutions face tough decisions, seeking practical and, above all, feasible solutions to meet the demands of their audiences.

Feasibility is a major concern in cataloguing. In an ideal world, every photographic item would be described so that each individual photograph can be located directly. However desirable that may seem, item-level description is in most cases impossible simply because of the amount of work it involves. For example: cataloguing a collection of 536,000 photographs on item level would require about 30,000 working days, which means approximately 136 years of continuous cataloguing!<sup>4</sup> Some institutions therefore opt for cataloguing on a higher level first, to provide at least a bird's eye view of their holdings.

Not only the quantity but also quality of descriptions is an aspect to be considered. There is wide agreement that the quality of catalogues improves if they follow certain standards. However, as some would say, the good thing about standards is that there are so many to choose from. The 'In the picture' survey showed that many different descriptive models are used to catalogue photographs. Especially when the photographic collections are only a (small) part of the holdings of an institution, they are frequently catalogued according to a descriptive model not specifically

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<sup>4</sup> 536,000 is the average size of the survey population from the 'In the picture' report, assumed is an average time of 20 minutes a piece, 6 effective working hours a day, 220 working days a year

## DATAELEMENTKATALOGEN: Standardization of Swedish photo catalogues

In 1996 the Swedish Fotosekrariat and NAD-council (National Archive of Sweden) decided to build a descriptive model for photographs that would fit the purposes of archives, libraries, museums and other memory institutions holding photographic collections. From the start all those involved were convinced of the indisputable value of preserving the information about the original purpose and use of the photo. It was decided that a collection should be kept together as one unit, linked to the person or organisation that created it. Physically the material did not necessarily have to be kept together, as long as it was represented as a whole in the information system. The concept of provenance became the basis of the new guidelines.

When discussing these guidelines, it became clear that only very few institutions would have the resources to register every single photographic item. At the same time it appeared from experiences of the Swedish photo working group in the field that many institutions would have to choose between the system that the working group would come up with, or no registration at all. Therefore, the decision was made to introduce a multilevel structure that allows description at any level of grouping. The multilevel structure was copied from the ISAD(G) principles.

The 'Dataelementkatalogen', as the model designed by the working group is called, describes a large number of elements. One of the reasons for this is the ambition to combine the different traditions and needs. However, not all elements need to be used: every institution is supposed to set their own priorities and select what they need. Only a few elements are required in order to make possible to exchange information. These

are the elements documenting the identity of the item(s), provenance, and what is depicted.

The elements in the catalogue are structured in a model consisting of:

1. *General data*  
Data about the institution that is responsible for the catalogue and information about updates.
2. *Identity statement area*  
Mandatory information about the unit that is described – archives, collection, series or photograph – its reference code, name and date.
3. *Provenance and context*  
Information about the creator of the unit.
4. *Content and structure area*  
Registered content description and keywords.
5. *Conditions of access and use area*  
Information about availability of the unit of description. Copyright issues are also included here.
6. *Allied materials area*  
Information about materials with an important relationship to the unit that is described.
7. *Technical area*  
Information about the photographic technique and size.

Ever since the introduction of the Dataelementkatalogen in 1996 efforts have been made to make users understand these theoretical guidelines. Although not always successful, these efforts did generate discussion about the need of standards, which was an important development in itself. Currently the Fotosekrariatet at Nordiska Museet is working with a prototype of the guidelines.

- Based on an interview with Torsten Johansson, Stockholm City Museum, involved in development of Dataelementkatalogen (April 2001)

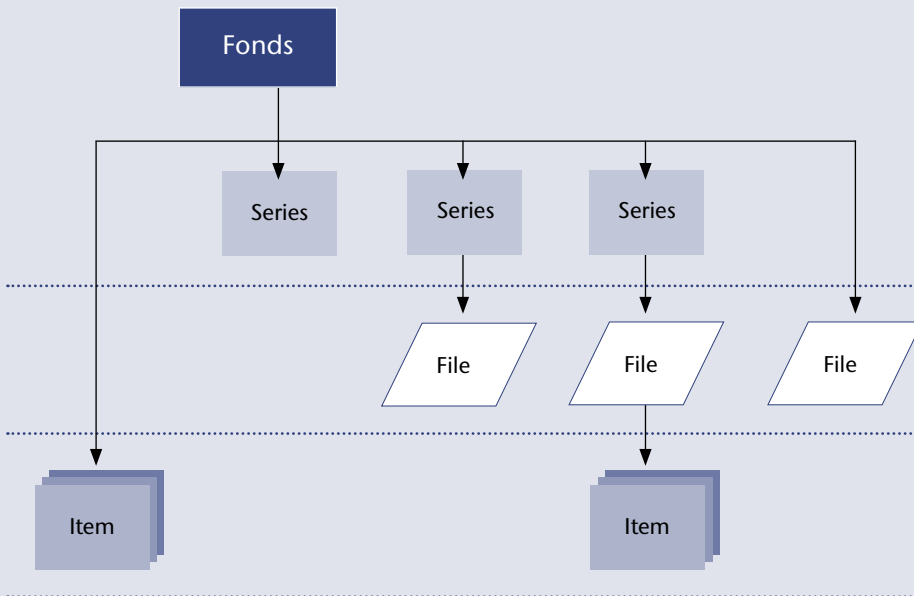


Figure: Structure of the Dataelementkatalogen, used with kind permission from T. Johansson



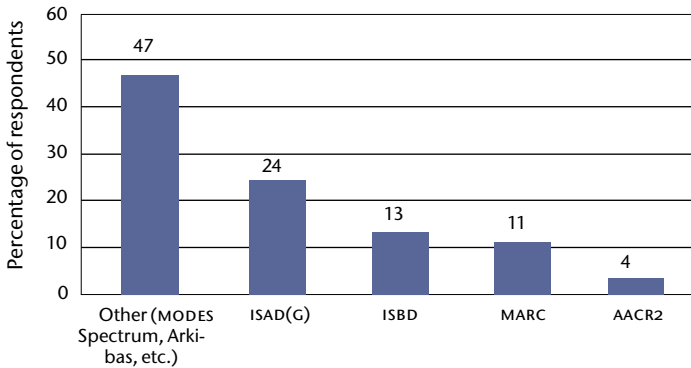


Figure 1: Use of descriptive models

meant for photographic materials, like e.g. ISAD(G)<sup>5</sup>, ISBD<sup>6</sup>, AACR<sup>7</sup>, etc. Some institutions use custom-built models, not connected to any standard at all, but specifically devised to meet their own demands. Only a small minority use a standard model developed for photographs (see figure 1).

Standards may help to improve consistency and accuracy of a catalogue, but in this digital age the primary argument for applying a standard is the possibility of sharing data and searching through distributed databases. For cataloguing photographs currently there is no widely accepted international standard. Because of the relatively recent appreciation of photographic collections, there has not been a long tradition of cooperation between institutions, certainly not on an international level. However, there have been some national initiatives in Europe to synchronize cataloguing practices. In Norway, for instance, the ‘Feltkatalogen’ was introduced in 1998 in several art and cultural-historical museums to describe photographs. The Dutch Photographic Soci-

*Photo previous page: Street hawker of plaster objects, 1900s. Photograph: A. Malmström. Original negative, 9x12 cm, Dry Plate, Gelatin, courtesy of Stockholm City Museum*

<sup>4</sup> 536,000 is the average size of the survey population from the ‘In the picture’ report, assumed is an average time of 20 minutes a piece, 6 effective working hours a day, 220 working days a year

<sup>5</sup> General International Standard Archival Description, URL: <[http://www.ica.org/biblio/isad\\_g\\_2e.pdf](http://www.ica.org/biblio/isad_g_2e.pdf)>

<sup>6</sup> International Standard Bibliographic Description, URL: <<http://www.ifla.org/VII/s13/guide/isbdg03.htm>>

<sup>7</sup> Anglo-American Cataloguing Rules, URL: <<http://www.nlc-bnc.ca/jsc/index.html>>

ety developed 'FOTIOS' for Dutch institutions with photographic collections. In 1996 the Swedish Fotosecretariat in close cooperation with the Swedish National Archives developed the 'Dataelementkatalogen', a cataloguing model for Swedish memory institutions. There are similar initiatives in other European countries, all aimed at standardising cataloguing of photographs one way or another.

When non-specific systems are used to describe photographs (such as those developed for books, documents or other non-photographic materials), cataloguers may be forced to stretch the meaning of elements to squeeze in information that is specific to photographs. Consequently, even if two institutes use the same standard, say ISAD(G), that does not automatically mean that their descriptions are identical. They can diverge because elements are used differently, or because of differences in the selection of elements that are used, or because ISAD(G) rules and elements are interpreted differently.<sup>8</sup>

Why is it that although some standardized solutions are available, institutions still choose to develop their own descriptive models, or use models not specifically geared at describing photos? In some cases an institution considers its collection to be so special that only a custom-made model can cope with its peculiarities. Or the photographs may be only (a small) part of the whole collection and need to be fitted with all the other materials into one single system-like for instance at the International Institute of Social History.

Using a standard descriptive model may help to make better descriptions, but ultimately creating high-quality descriptions is a matter of applying the rules accurately and in the same way. Consistency is the key factor, and can be achieved only if there are clear and explicit rules to guide those making the catalogue entries. These rules should be in accordance with the way a memory institution wishes to present its collection to its users.

The many different types of photographic collections are held by very different institutions (or private persons). Naturally, there is a great difference between a small museum holding a collection of 5,000 fine art photographs and a municipal archive responsible for 5 million photographs of streets and buildings. The approach in cataloguing photographs is largely determined by the role of

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<sup>8</sup> Deliverable 5.1: Descriptive models for photographic materials (Amsterdam, 2001), URL: <<http://www.knaw.nl/ecpa/sepia/workinggroups/wp5/deliverable51.pdf>>

the institution and the requirements of the user group(s) of an institution, or at least the way the institution perceives its users. As these user groups are as diverse as the photographic collections themselves, it is unlikely that there will ever be one universal approach to cataloguing.

Photographs are difficult to catalogue for many reasons: there are often many ways to describe what you see, it is often very hard to retrieve contextual information, and in some cases it requires an expert's eye to identify the technical aspects of a photographic item. The way a catalogue entry is put together very much depends on the way a cataloguer interprets the picture, which aspects seem the most relevant to mention. This interpretation again depends on the cataloguer's background expertise, which of course differs from person to person.

For instance, the picture below could be described as: 'A man and a boy working on a big machine in an interior'. This kind of description focuses on what can be seen in the photograph, without providing any detail on the background. It basically describes



*Courtesy of Finnish Museum of Photography, Helsinki*

## NATIONAL LIBRARY OF SPAIN: How to fit a round peg in a square hole

The Biblioteca Nacional in Madrid is the head institution of the national library system in Spain. The library serves a very wide public but focuses specifically on general researchers. The collections of the Biblioteca Nacional include all types of publications and printed materials. Apart from collections of books and periodicals, it has several sections for specific and special collections such as the Manuscript and Rare Books Collection, Music and Audiovisual Collection, Cartographic Collection, and the Drawings and Prints Collection.

The Photographic Collection is a section of the Drawings and Prints Collection. It consists of around 600,000 prints from both the nineteenth and the twentieth century and close to 700,000 negatives mainly from the twentieth century. The collection covers a period from the early 1850s to the end of the twentieth century. Most photographic and photomechanical processes developed during this extensive period are well represented in the collection.

Every year around 2,000 users consult the Photographic Collection. The collection can be accessed through the 'Guía-inventario de los fondos fotográficos' (inventory of the photographic collection published in 1989) as well as through various lists and databases produced as updates to this guide. BNE has few photographs catalogued in the computer system of the library, and even though there have been some studies to make the photographic references available on line, the possibilities of using MARC for the description and retrieval of photographic materials are still being reviewed.

Most of the photographic prints collection has been described at the level of inventory, which already includes the main fields for the next level of cataloguing. From this starting point the Library can devise a strategy for the next step, determine the depth of description required for each part of the collection, and collect information for tools needed to achieve a consistent catalogue (closed lists of terms, thesauri, heading lists, etc.). Currently the different levels of description for different parts of the collection have been defined, based on the importance and the specific nature of the different photographic holdings and of user requirements.



*Luciano Roisin (ca. 1880-1943). La Coruña. Riazor Beach, ca. 1920. Rotog. Nacional de España, Madrid*

In recent years a detailed inventory has been made of the negative collection, describing the general structure of the different archives, the contents, and the conservation requirements and status of each one of the parts within this large negative collection. In 2000, a specific collection of 1,300 negatives (Lagos) was catalogued completely in a Microsoft Access database, linked to digital images of each single item (reference images as well as a full set of high/medium quality scans for each negative involved).

The standard descriptive model at the Biblioteca Nacional of Spain is ISBD with a MARC format (IberMARC), which was chosen because it is a

widely accepted standard within the library community. Not only books but also all other materials within the Library are described in the same system. The main advantage of this approach is that it is easier and cheaper to maintain one single system. Another advantage is that different types of materials can be accessed through one specific heading (which some also regard as a drawback since it can introduce a high level of noise in the information that is retrieved).

When using MARC and ISBD for photographic materials the main difficulty is that it is aimed at describing individual items. The many relevant interrelationships between sets of photographs (negatives or prints) are not easy to record and require adaptations to the system itself, especially in order to keep to system convenient to use.

Sometimes there is no appropriate field to enter the data, or the field has to be adjusted in order to accommodate data that was not foreseen when the system was developed. As a result a lot of information relating to photographs is logged in the notes areas since photographs have very little textual information associated to them as required in the other data fields. This may complicate search-and-retrieval. Homogeneity of the terms to be included is of vital importance to improve search-and-retrieval facilities.

With special thanks to Isabel Ortega García, Responsable de la Sección de Fotografía, Servicio de Dibujos y Grabados and to Gerardo F. Kurtz, specialist in the treatment of photographic holdings, for his cooperation.

- Website of National Library of Spain, URL: <<http://www.bne.es>>



Cravure, 112 x 281 mm (Postcards. La Coruña), courtesy of Biblioteca

## EUROPEAN VISUAL ARCHIVE (EVA): Interoperability in practice

The European Visual Archive is a searchable image base that was originally set up as an EU-funded project in 1998-2001. Currently it contains about 18,000 historical photographs from two different archives: the London Metropolitan Archives (UK) and the Stadsarchief Antwerpen (Belgium). Both collections had been described in ISAD(G). In order to present them together in one application, the existing descriptions were fitted into an intermediary descriptive scheme called EVO-lite, which was partly based on the Dublin Core Initiative Data Element Set. EVO-lite contains basic information about the digital image, the photograph that is represented by the digital image, and the contents of the image. One of the main aims of EVA was to create a multi-lingual search. A list of search terms, derived from the existing descriptions, was translated automatically and manually into different languages.

A considerable number of irregularities and inconsistencies were encountered in the process, such as spelling errors and information filled out in the wrong field in the database. This once more underlined the need for controlled lists, the use of rules and scope notes, and rigorous quality checks in creating catalogues.

- EVA website: URL: <<http://www.eva-eu.org>>
- Horik, R. van, 'Archives and Photographs: the European Visual Archive Project (EVA)' in: *Cultivate Interactive*, issue 3, 29 January 2001, URL: <<http://www.cultivate-int.org/issue3/eva/>>



*London County Council, ambulance, Bloomsbury Ambulance Station, Herbrand Street, Holborn 1920, courtesy of London Metropolitan Archives*



*Courtesy of Stockholm City Museum*

what this photograph is *of*, and such a description does not require a lot of background knowledge of the cataloguer.

Another way to describe this photograph would be: 'A pressman supervising a printer's apprentice setting the sheets to the new German rapid printing machine at the Uusi kirjapaino-printing company in Kuopio in 1900'

In this case the cataloguer provides far more background information, putting the photograph into a historical context by providing details on the 'what', 'where', 'when' and 'who' aspects.

Providing information *about* a photograph is generally more time-consuming, but it may provide a context that is essential to understand its meaning. For instance, the photograph above shows Swedish javelin thrower Erik Lemming, setting a world record of 60.64 m. at the Olympic Games in Stockholm in 1912. It is obvious that this photo owes much of its value to its historical context.

Then it is also a question of how an institution decides to present its collection, which depends on the purpose of the collection, the type of users, the conventions in a specific sector, etc.

For instance, a historical museum might describe the picture

## THE INTERNATIONAL INSTITUTE OF SOCIAL HISTORY: One for all

Situated in Amsterdam, the International Institute of Social History (IISH) was founded in 1935 and is one of the world's largest documentary and research institutes in the field of social history in general and the history of the labour movement in particular. The IISH holds over 2,300 archival collections, some 1 million printed volumes and about as the same amount of audiovisual items. It has a large archive as well as a library.

The institute's photographic collection contains about 640,000 items, most of them not older than 50 years, covering a wide range of subjects in relation to social history, including labour movements, social reformers and political parties. Just about half of the photographic collection consists of negatives.

About 80,000 photographs have been digitised and are now used in the reading room as reference images to accompany the catalogue descriptions in the automated search system. All descriptions are available online (URL: <http://opac.iisg.nl:8500/>). Here the MARC annotations of every record can be viewed.

The photographic collection has predominantly been described on item level; about 10% is described on group level. The photographs are described in MARC format according to a Dutch interpretation of the International Standard for Bibliographic Data (ISBD) rules (FOBID [Federatie van Organisaties in het Bibliotheek-, Informatie- en Dokumentatiewezen]-version) in MARC format. Certain MARC fields (which are not in ISBD) have been added to customise the model for photographic materials, together with an IISH-specific thesaurus developed in house.

The main reason for the IISH to choose ISBD to

describe its photographs was that they wanted to have catalogue entries for all their materials (books, serials, brochures, pamphlets, photographs, sound material, textiles and more) combined in one automated system. The primary reason for this was simplifying management and maintenance of the system, as it is easier to maintain one system than several and easier to integrate one descriptive model into the system than several different ones.

When describing photographic items Eric de Ruyter, who works at the 'Ontsluiting Beeld en Geluid' department, focuses on the content and the context, not so much on the physical object, unless it is in the interest of the visitor to know (e.g. the term 'halftone' is sometimes included because it has consequences for printing the image). 'Man throwing stone' must be placed in a context to make it 'Man throwing stone on the Kurfürstendamm in Berlin, after speech held by Egon Krenz on 18th of October, 1989'. Visitors come up with a wide range of questions varying from 'Do you have that picture with that man on the Kurfürstendamm?' to 'Do you have pictures that have something to do with the speech held by Egon Krenz on 18th of October, 1989?'. In order to improve access IISH developed its own thesaurus.

ISBD is mainly intended for describing items individually. Describing photographic materials on a series or collection level is very hard. With some improvisation and stretching of the rules it can be done, but it remains inconvenient.

With special thanks to: Eric de Ruyter, department 'Ontsluiting Beeld en Geluid', International Institute for Social History, Amsterdam.

- Based on a meeting with Eric de Ruyter, department 'Ontsluiting Beeld en Geluid', February 2001 and the 'Handleiding Beschrijving Beeldmateriaal', IISG, Afdeling Ontsluiting Beeld en Geluid, Amsterdam 1996 (unpublished document)
- Website International Institute of Social History, URL: <<http://www.iisg.nl>>



*Protest against wage restrictions in Rotterdam docks, August 1979, courtesy of International Institute of Social History, Amsterdam*

below as: ‘Trippenhuis at the Kloveniersburgwal in Amsterdam, built in 1660-62 by Justus Vingboons, assigned by weaponry merchants and brothers Louys and Hendrick Trip’. As a document about academic institutions in the Netherlands it might be described as: ‘The Royal Netherlands Academy of Arts and Sciences, 1972’ (for this building houses the Academy, as the sign next to the door says). A vintage car museum may catalogue it as: ‘Opel Cadet’ (because there is one in front of the building). And an advertising agency as: ‘Autumn in Amsterdam’.

None of these descriptions is the definitive one: each focuses on a different aspect of the photograph, intended to meet the requirements of the specific audience the organisation aims to serve. It can easily be seen why cataloguing photographs can become time-consuming if in order to provide the necessary con-



*Courtesy of the Royal Netherlands Academy of Arts and Sciences, Amsterdam*

textual information about what is depicted research has to be done and details need to be checked.

Apart from describing the picture presented by the photograph, its physical characteristics also need to be documented. Since photography was introduced in 1839, numerous photographic processes have been developed. Identifying them is not easy and often a job for experts, but it is very important to know the characteristics of the material in choosing enclosures for storage, or determining optimal environmental conditions or for conservation treatment.

To complicate matters further, the same depicted scene may have various physical manifestations in a collection; it may for instance exist as a negative, a positive print, a duplicate and a digital image. A catalogue should ideally provide information on the interrelationships of these various manifestations. However, in a large collection the connections between different physical images are not always known, and in any case most catalogues do not have convenient provisions for recording these relationships accurately. As a result this information is often not recorded at all, or in a roundabout way.

The advent of digitisation has placed new demands on keepers of photographic collections. In today's information society easy search-and-retrieval of information is considered a basic requirement, and cultural institutions are expected to play their parts as information providers. With the increasing amount of unauthorized and unreliable information presented on the internet, memory institutions, more than ever before, have a responsibility as trusted guardians of authentic materials.

As a growing number of institutions use their image bases to present (part of) their photographic collections on the Internet, in some cases including services for providing duplicates to customers, it is primarily the quality of the descriptions that determines the success or failure of the digitisation project. Web presentations mostly rely on existing catalogue entries for their search-and-retrieval, and in the process of creating a website the weaknesses and gaps in the catalogue come to light. All too often it appears that new catalogue entries have to be made from scratch, or existing entries have to be thoroughly corrected and standardized, and in many digitisation projects the work required for providing proper captions turns out to have been underestimated in the original planning. In the end, work on descriptions consumes a substantial part of project time; for instance, in the





project 'Geheugen van Nederland' almost one third of the budget goes to creating catalogue entries.<sup>9</sup>

To facilitate searching through different collections on the internet and exchanging of catalogue records amongst cultural institutions, several initiatives have been developed over the last years, of which the Dublin Core Metadata Initiative and the Open Archives Initiative Protocol for Metadata Harvesting are the most widely known. These standards are meant as tools enabling institutions to connect their collections easily with others with minimal adaptations, even when their catalogues are based on different models. Although exchange standards can create a bridge between catalogues that are organised on the basis of different principles and thereby contribute to interoperability, ultimately it is the consistency of the cataloguing that determines the success or failure of the exercise. An exchange standard can do nothing to improve the quality of the catalogues themselves and the need for careful, systematic description remains as great as ever.

Catalogues play a crucial role in preservation. Preservation is not only a matter of keeping materials, but of keeping them accessible, and without proper catalogue entries individual photographs, however carefully they are being taken care of, would literally be lost. Now that digital photographs are increasingly finding their way into collections, the role of description for preservation is emphasized even more. Experts on digital preservation agree that thorough documentation of technical characteristics of digital files limits the risk of losing access to them in the near future. In the digital era documentation and preservation have become even more closely linked than before. Whereas with analogue photographs technical details on material aspects need to be known in order to take proper care of them, with digital images one needs to know what type of file one is dealing with just to make sure it remains accessible, that the image can still be seen. Although there are many similarities between cataloguing a digital image file and an analogue photograph -both present a visual image created by a photographer at some point in time- when it comes to the actual technical details a whole new set of elements

*Photo previous page: Cyclists in Naerodalen (Norway). Photo: Axel Lindahl, ca. 1880-1890, courtesy of Norsk Folkemuseum, Oslo*

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<sup>9</sup> Website 'Geheugen van Nederland', URL: <<http://www.geheugenvan-nederland.nl>>

## OPEN ARCHIVES INITIATIVE PROTOCOL FOR METADATA HARVESTING: Low-barrier exchange of records

The Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) is a technical protocol that allows archives to easily share their records with others. In the role of so-called ‘data providers’, archives (in a loose sense of the word, for actually it concerns anyone keeping collections of any kind) make their records available in XML format on the internet. Central, Google-like systems, the so-called ‘service providers’, harvest this data regularly, index it and make it centrally searchable. Apart from picking up data from data providers a service provider can also host and synchronize different descriptive models, enabling users to perform cross-searches through differently catalogued collections.

OAI-PMH is a low-barrier interoperability framework, allowing institutions to share their records with minimal effort. Institutions can make their descriptions available according to different metadata standards (like e.g. ISAD(G), ISBD, MARC, etc.). At a central level, multiple, differently catalogued collections can be searched through their greatest common denominator or according to their original descriptive model.

When, for instance, data provider 1 has a descriptive model that calls the photographer the ‘author’ and data provider 2 has a descriptive model that uses the label ‘photographer’, at the level of the data or service provider ‘author’ and ‘photographer’ will be synchronized or ‘mapped’, e.g. to the Dublin Core element ‘creator’. So if at the level of the service provider a user searches for creator, through the Dublin Core format, the system will check the fields ‘author’ and ‘photographer’, respectively, when searching the collections of data provider 1 and data provider 2.

The OAI-PMH is very much a practical implementation based on the philosophy and ideas of the so-called Semantic Web, advocating a more intelligent, coherent use and presentation of information on the World Wide Web.

- Open Archives Initiative website, URL : <<http://www.openarchives.org/>>

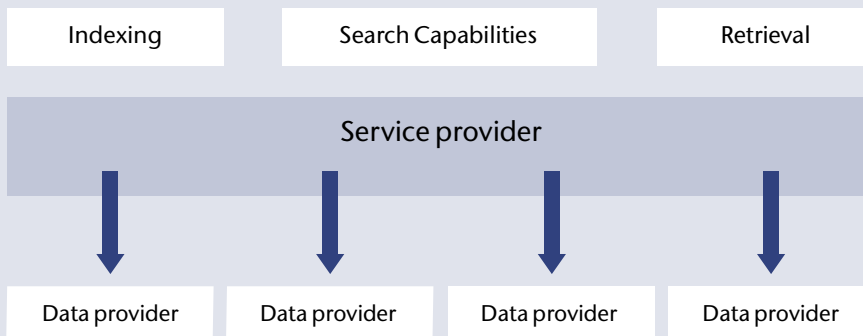


Figure: Used with kind permission from Rutger Kramer, Netherlands Institute for Scientific Information Services

## DUBLIN CORE: Universal exchange format

The Dublin Core Metadata Element Set was established at a meeting in Dublin (Ohio) in 1995. Its aim was to act as a simple tool for adding metadata to electronically distributed documents. Dublin Core was meant to enable producers of such documents to add relevant and structured metadata to their own documents. By using metadata in a standardised way exchange of these documents would become easier, or at least more convenient.

After the initial setting of the standard in 1995, it has developed through the work of several international committees, this type of standardisation work being an ongoing process. Dublin Core has recently been approved as ISO standard (ISO 15836) and is now widely accepted as a good working tool for its purpose, among other metadata standards.

- Website, URL: <<http://dublincore.org/>>



*Berg & Høeg: Bolette Berg and Marie Høeg in a boat, 1896, courtesy of Norsk Museum for Fotografi – Preus Fotomuseum, Horten*

- Website ISO, URL: <<http://www.niso.org/inter-national/SC4/sc4docs.html>>
- PictureAustralia, URL: <<http://www.pictureaustralia.org/>>

PictureAustralia offers a cross-collection search-and-retrieval service that searches through pictorial collections of the National Library of New Zealand, National Library of Australia and many other, predominantly Australian cultural heritage institutions. Descriptions of PictureAustralia are according to the Dublin Core format.

- Worthington Memory, URL: <<http://www.worthingtonmemory.org/>>

This image base has been set up by a number of Worthington libraries in Ohio, US. Worthington Memory activities include digital imaging (scanning) of historical documents and photographs, creation of a searchable online index to local 19th and 20th century newspapers, a collection of oral histories and photographic documentation of the bicentennial year. Dublin Core is used as exchange format and can be viewed as such. This site is therefore an interesting example of use of how Dublin Core can be used to exchange pictorial records.

Dublin Core	
1	Title
2	Creator
3	Subject
4	Description
5	Publisher
6	Contributor
7	Date
8	Type
9	Format
10	Identifier
11	Source
12	Language
13	Relation
14	Coverage
15	Rights

is required to describe digital files. Currently there are a few initiatives that try to come up with a standardised set of elements, the most prominent of which are the PREMIS, NISO Technical Metadata for Digital Still Images, and the DIG35 initiatives.

To keep a photographic collection accessible over time it is important to make sure the catalogue itself is set up with a view to long-term access. Long-term access to any digital file, and hence also catalogue entries, may, for instance, be jeopardized if proprietary software is used, because of the dependency on the reliability of a software vendor. Current recommendations are to use open source software and store data in platform-independent, human-readable formats like XML, as this will limit the risk of software obsolescence. However, even open-source software tools require maintenance over time. By choosing an open standard that is widely accepted, the likelihood of future support increases because there is a larger user community with shared knowledge and an interest in maintaining the software in the long term.

It will be clear that a catalogue is the backbone of a collection in more ways than one and that the importance of investing in high-quality catalogue records can hardly be overestimated. Creating and maintaining such a catalogue requires a considerable investment in both staff and resources. How to improve the quality of catalogues for photographic collections while keeping the work involved within bounds was the central issue for the SEPIA Working Group on Descriptive Models.

*Photo next page: Liberation of Utrecht, 7 May 1945. Canadian soldiers are welcomed by an excited crowd, courtesy of Netherlands Institute for War Documentation, Amsterdam*





## CATALOGUING DIGITAL IMAGES: New challenges

Digital images are quickly gaining ground. An increasing number of photos are 'digitally born' and will sooner or later end up to be preserved for future generations by memory institutions. Cataloguing them will partly remain similar to cataloguing analogue photographs: describing the 'who, what, where and when' elements cannot be done without the knowledge and expertise of a cataloguer. The technical metadata (file size, compression rate, file format, etc.) however can often be retrieved automatically.

One of the crucial questions is not how this technical metadata is stored but what are the (most essential) elements to be stored. Preservation experts agree that recording this data can be of vital importance for ensuring that a digital image can be kept and retrieved over time. What elements to be used, is currently reviewed by a number of initiatives, some of which mentioned in more detail below.

### *PREservation Metadata Implementation Strategies (PREMIS): core preservation metadata for digital images*

The PREMIS working group, set up by OCLC (Online Computer Libraries Center) and RLG (Research Libraries Group), started in June 2003 and will be publishing its final results in June 2004. It will develop a core set of 'preservation metadata', which is defined as 'information necessary to carry out, document, and evaluate the processes that support the long-term retention and accessibility of digital materials'.

- PREMIS website, URL: <<http://www.oclc.org/research/projects/pmwg/background.htm>>



*Courtesy of Netherlands Photo Museum, Rotterdam*

*DIG35 Initiative Group - Metadata  
Specification Version 1.1:  
technical metadata for exchange purposes*

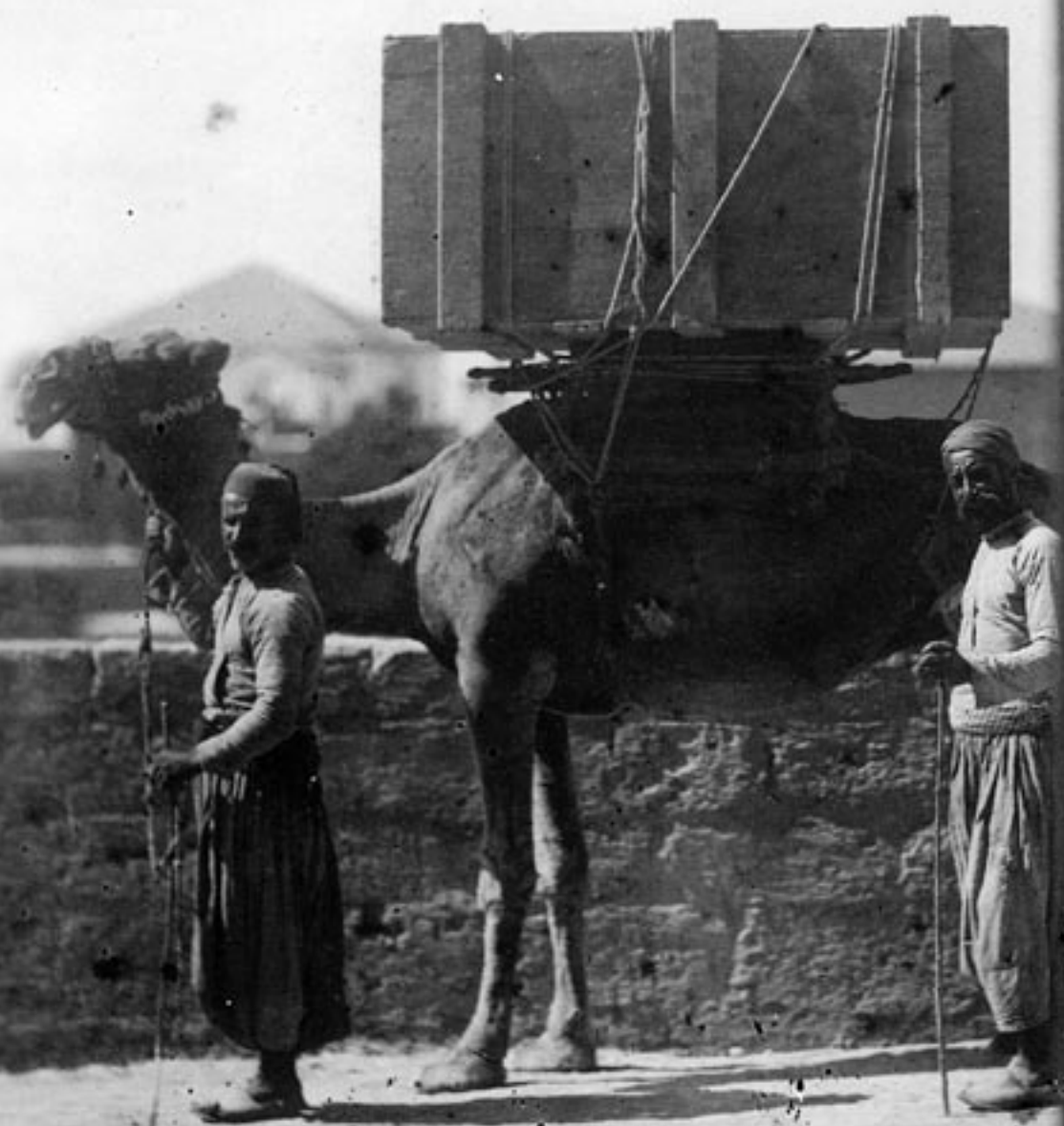
The focus of the DIG35 Initiative Group is on defining metadata standards, especially meant to exchange digital files. As a part of the International Imaging Industry Association, it consists of a number of commercial companies like Kodak, Canon, etc. Formed in April of 1999, the vision of the DIG35 Initiative Group is to 'provide a standardized mechanism which allows end-users to see digital image use as being equally as easy, as convenient and as flexible as the traditional photographic methods while enabling additional benefits that are possible only with a digital format'. DIG35 has recently announced to cooperate with RLG and PREMIS in the near future.

- DIG35 website, URL: <[http://www.i3a.org/i\\_dig35.html](http://www.i3a.org/i_dig35.html)>. Here you can register to receive the DIG35 Metadata Specification Version 1.1 publication.

*NISO Z39.87-2002 Data Dictionary -  
Technical Metadata for Digital Still Images:  
detailed cataloguing of digital images*

The NISO Data Dictionary, recently recognized as an accepted ISO standard, was initiated in April 1999 by the National Information Standards Organization, the Council on Library and Information Resources (CLIR) and the Research Libraries Group (RLG). Main aim was to accurately register technical metadata for digital still images. This would serve two fundamental goals: to document image provenance and history, and to secure an accurate output (print, screen, etc.) of the image. The dictionary as it is now contains a wide number of different elements to identify the data elements that are used by applications to control transformations of images against stated metrics for meaningful quality attributes such as detail, tone, colour and size, and assess the current value (aesthetic or functional) of a given image or collection of images.

- NISO draft report can be downloaded at: URL: <[http://www.niso.org/standards/standard\\_detail.cfm?std\\_id=731](http://www.niso.org/standards/standard_detail.cfm?std_id=731)>



## SEPIADES: unifying diversity

When SEPIA started in 1999, the general picture was that institutions used a great many different descriptive models to catalogue their photographic collections, that they were facing huge backlogs in describing photographs, that standardisation was largely absent and knowledge on identification of photographic processes limited. With an increasing number of institutions publishing their catalogues on the internet, inconsistencies and flaws become enlarged for a worldwide audience. In the SEPIA group it was felt that if institutions could agree on some common principles in cataloguing photographs, it would make life easier for institutions, in offering guidelines to follow and thereby prevent duplication of efforts. It would at the same time make life easier for users, who now have to deal with all kinds of different search-and-retrieval tools.

SEPIA participants then agreed that it should be one of the focal activities of the project to formulate recommendations for cataloguing photographic collections. These recommendations should be made by and for cataloguers, comprising the shared expertise of experienced professionals in the field. The aim was to create a descriptive model that would present a core set of elements relevant for all.

In order to promote actual use of this descriptive model, software would be developed on the basis of the recommendations, to implement them in a working tool. This software should reflect the basic ideas of the advisory report, allowing users a certain amount of freedom to create their own model while at the same time ensuring some level of similarity. The software would not only be a proof of concept for the descriptive model that was going to be developed, but also an user-friendly tool that would guide institutions in describing photographs, intended to coexist beside existing general descriptive models.

One year later, in 2000, the SEPIA Working Group on Descriptive Models was founded, consisting of five SEPIA partners:

- Stockholm City Museum, represented by Torsten Johansson, photographic conservator
- Norwegian Archive, Library and Museum Authority, represented by Kristin Aasbø, Senior Archivist at the National Library of Norway

*Photo previous page: Cairo around 1900, modern contact print from a silver-bromide glass plate, courtesy of Centre de Recherches sur la Conservation des Documents Graphiques, Paris*

- National Library of Spain, represented by Isabel Ortega García, responsible for the photographic holdings
- Finnish Museum of Photography, represented by Anne Iso-mursu, photographic researcher
- European Commission on Preservation and Access (ECPA), represented by Edwin Klijn, Publications and Public Relations

Two expert meetings and three national meetings were organised to gather ideas and hear about experiences from professionals in the field. In 2000-2003 the working group held five working sessions, during which the basics of the model were constructed and developed further into more detail. A draft version of the final report was sent out for comments in April 2003.

As work on the model progressed, it became obvious that in the main structure a basic order to create sets of elements should also be taken into consideration. Requirements formulated at the first expert meeting in Stockholm, especially the feature of multi-level description, caused the model to expand into a much larger set of elements than initially intended. It appeared that an extensive set of elements was inevitable if the model was to be applicable for all kinds of photographic collections, each with their own priorities for cataloguing. The challenge was to create a structure that would allow cataloguers to limit descriptions to their own preferred elements, at any level. The last phase of the project focused on the organisation of the elements and the paths in the structure that would make this possible.

The advisory report about SEPIADES (SEPIA Data Element Set), as it stands now, presents a detailed and structured model for describing photographs. It includes:

- more than 400 suggested data elements to describe photographs
- 21 core elements to describe a photo
- references to relevant online and offline literature
- a multilevel model for describing photographic collections
- recommendations on how to use Dublin Core for photographic collections

SEPIADES is not meant to be a strict, rigid model. Although it includes a large number of elements, only a few of them are regarded as absolutely essential and could be called 'mandatory'. The others have been listed and defined so as to provide users with suggestions for coping with a specific area of description or documentation that they want to focus on. There are, for instance, large sets of elements available for technical identification, physical characteristics and damage assessment, but these are by no means 'mandatory': their purpose is to offer guidance for those interested in detailing these aspects of their collections.

SEPIADES is a model exclusively developed for photographic collections. Since as a rule institutions already have a general descriptive system for their collections, SEPIADES is intended as a supplementary tool specifically geared at dealing with the characteristics of the photographic collection. Basically it is envisaged to function beside existing general descriptive models, but it does not rely on any other system and can also be implemented as a separate, independent tool.



Lancaster  
and

## SEPIADES in detail

### *Multilevel description*

Cataloguers of photographic collections are often faced with large collections and limited time. Even though it may be desirable, description of every single item is often impossible. In the expert meetings held by the working group, many participants recommended to devise a model that would allow cataloguers to describe their collections on grouping and/or collection level only, without being forced to go down to the level of the single items. From a very early phase in the project, this became one of the basic requirements of the SEPIADES model.

Research was done into various existing, multilevel descriptive models like ISAD(G) and FOTIOS. In order to make it possible to apply the model to all kinds of existing collections, it should be able to deal with any number of levels in a collection. Many multilevel models have a fixed number, while in reality a collection can be built up with a varying number of levels. In SEPIADES cataloguers determine the structure of the hierarchy and are free to create any number of levels and sublevels they require.

### *Institute, collection, grouping and single item*

The highest level in SEPIADES is the institute level. Basic identity information like address, country and a short description of the institute's collection(s) are included here. Such information may be relevant if for instance information is exchanged with other institutes.

An institute holds one or more collections. A collection is a 'group of objects that have been brought together by an individual or organization' (AAT)<sup>9</sup>. Every collection consists of one or more groupings. A grouping is an aggregate of physical images that could either be a subdivision of a collection or of another grouping. Every collection or grouping consists of one or more single items (Figure 2).

*Photo previous page: Academy of Commerce, Krakow, Poland, ca. 1906, silver gelatine, courtesy of State Archives in Krakow*

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<sup>9</sup> Getty Art and Architecture Thesaurus, URL: <<http://www.getty.edu/research/tools/vocabulary/aat/>>

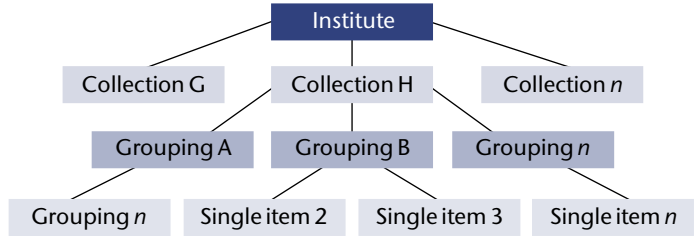


Figure 2: Main structure of SEPIADES model

*Single item: visual and physical images*

One of the specific features of a photographic image is that it can have one or more physical manifestations: a print, a negative, a slide, a digital file (0s and 1s), etc. Catalogues often duplicate information about the picture for every single physical manifestation, causing unnecessary redundancy. In the SEPIADES model the scene visible on the photograph (‘visual image’) is registered once and connected to all its various manifestations (‘physical images’) (Figures 3 and 4).

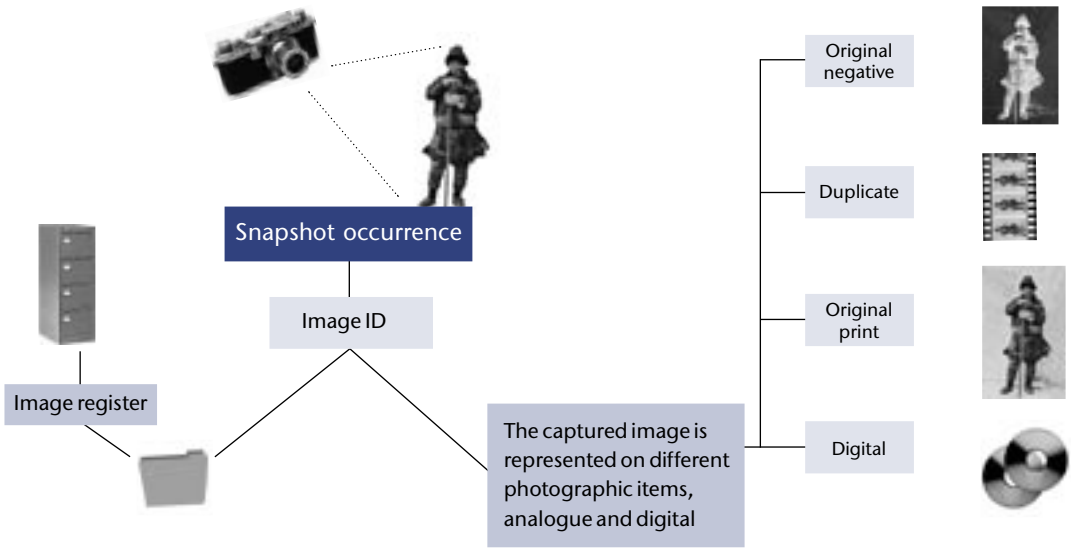


Figure 3: Physical/visual image distinction, based on a model developed by Stockholm City Museum

The reason of this distinction is twofold: it avoids redundancy because information about what is being depicted has to be registered only once. It also makes for efficient organisation of a collection, showing clearly in which formats an image is available. In this way, the interrelationships between the various physical manifestations of the same image can easily be established.

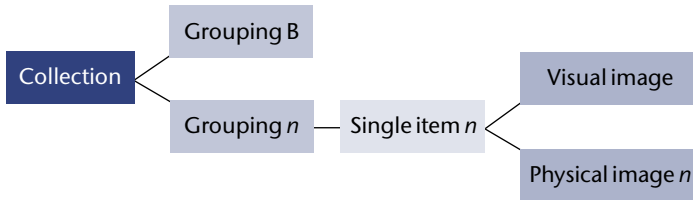


Figure 4: SEPIADES model including single item

### *Acquisition module*

Apart from recording data about what is depicted and on which formats, one of the functions of a catalogue is to provide information about how the material entered the institute, who is/are the previous owner(s) and what has happened to it over time. Provenance is important for both research and copyright purposes, and institutes often include it in an acquisition register, which operates more or less separate from the catalogue. In SEPIADES, an acquisition register is integrated into the catalogue, to provide a direct link between the items and their acquisition so that the information can be easily checked.

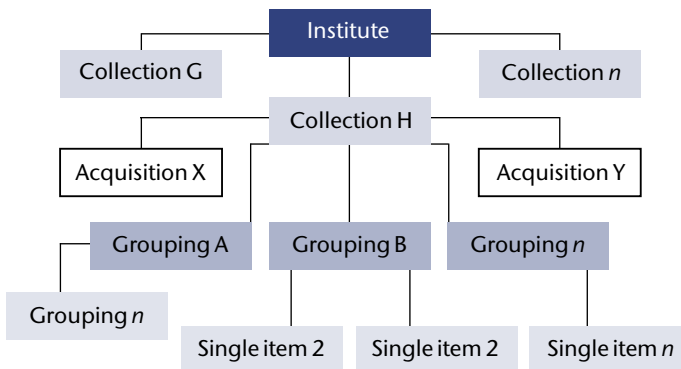


Figure 5: Full SEPIADES model

### *Administration, provenance and material*

All the separate parts (collection, grouping, single item, acquisition, institute) are themselves divided into three subdivisions: *administration*, *provenance*, and *material*, reflecting the focal points of the catalogue. ‘Administration’ includes elements relevant for basic management, ‘provenance’ includes information about the origins of the unit(s) described, and ‘material’ covers the visual and physical characteristics.

Photo next page: Emilio Beauchy (1847-1928), Portrait of Soledad, ca. 1890, Albumen paper, cabinet card, courtesy of Biblioteca Nacional de España, Madrid



## SEPIADES software tool

In close cooperation with the working group, the Netherlands Institute for Scientific Information Services (NIWI) developed a software tool to implement the model as formulated in the SEPIADES report. Some basic features of this tool are:

### *Multilevel description*

Cataloguers can create their own description tree to represent the structure of their collections.

### *Flexible and easy customizing*

By configuring one of the five core XML files, elements, lists, pull-down menus and memo fields can be created or deleted.

### *Records stored in XML*

The SEPIADES tool is XML-based, so all records are stored in human-readable XML-files that can be viewed with any text editor on any platform. This makes it easy to maintain records over time and allows re-using them for other purposes in other applications.

### *Export function to Dublin Core*

The SEPIADES tool allows users to export their records to Dublin Core XML files, according to the recommendations of the SEPIA Working Group. This function allows cross-collection exchange of records in Dublin Core format.

### *Full text search-and-retrieval*

The tool offers a full text search-and-retrieval function to retrieve records from every part of every collection, allowing wildcards, operators and advanced querying.

### *OAI-PMH compliant*

By using the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH), the tool enables institutions to share access to their records with others. The SEPIADES tool is geared to act as a data provider.

### *Flexible integration with other systems*

SEPIADES has been programmed in Java and XML, allowing flexible integration with existing general descriptive models.

### *User support*

There is a 47-page user manual with detailed explanations on how to use the SEPIADES tool.

### *System requirements*

Microsoft Windows 98 (1st or 2nd edition), NT 4.0 (with Service Pack 5 or later), ME, XP, and 2000 (with Service Pack 2 or later), OSX and Linux kernel v 2.2.12 and glibc v2.1.2-11 or later.

## IMAGE BASES:

### Some examples<sup>10</sup>

- **American Memory Project**, URL: <<http://memory.loc.gov/>>  
Example of authoritative American digitisation project, compiled by the Library of Congress National Digital Library Program, with the participation of many other libraries and archives. The program provides a gateway to primary source materials on the history and culture of the United States. More than 70 collections are currently available on line, consisting of documents, films, manuscripts, photographs, and sound recordings.
- **Beeldbank Gemeentearchief Amsterdam**, URL: <<http://gemeentearchief.amsterdam.nl/archieven/beeldbank/>>  
The 'Beeldbank' contains about 120,000 images from the pictorial collection of the Amsterdam Municipal Archives (in Dutch).
- **Collage London Guildhall Library**, URL: <<http://collage.cityoflondon.gov.uk/>>  
British image base, containing more than 20,000 works of art owned by the Corporation of London's Libraries and Art Galleries Department.
- **'Deutsche Kolonialgesellschaft' (German Colonial Society)**, URL: <<http://www.stub.bildarchiv-dkg.uni-frankfurt.de/dfg-projekt/default.htm>>  
German image base, set up and maintained by the Stadt- und Universitätsbibliothek Frankfurt am Main, containing about 50,000 images from the German Colonial Society archives.
- **Direction des Musées de France base Joconde**, URL: <<http://www.culture.gouv.fr/documentation/joconde/fr/pres.htm>>  
French image base containing over 130,000 works of art, including photographs. About 80 museums participate in this initiative, coordinated by the French Ministry of Culture.
- **Early Photography**, URL: <<http://www.earlyphotography.nl>>  
This Dutch image base presents highlights from early photographic collections held by the Rijksmuseum (Rijksprentenkabinet) in Amsterdam, the Print Room of the University of Leiden and 25 other museums, archives and libraries in the Netherlands. The catalogue encompasses more than 3,700 portraits, city views and landscapes from the pioneering period 1839 -1860. The photographs were taken in the Netherlands, France, England, Germany and the United States by both Dutch and foreign photographers. Famous images by photographers such as William Henry Fox Talbot, Edouard Baldus and Gustave Le Gray are found along with the earliest photographs of Amsterdam, Rotterdam, The Hague and Haarlem. Every technique is represented, from daguerreotypes to salted paper prints, glass negatives, paper negatives and photolithographs. The various uses of photographs are also presented; photographs in a case or in a frame; photographs pasted in books or albums; and stereographs.

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<sup>10</sup> Links checked on 10-5-2004

- **Galleri Nor**, URL: <<http://www.nb.no/galleri-nor/>>  
Image base of the collections of the Royal Library of Norway. It contains about 70,000 records (in Norwegian).
- **National Library of Australia Pictorial Collection**, URL: <<http://www.nla.gov.au/catalogue/pictures/index.html>>  
This image base contains descriptions of paintings, drawings, prints, photographs and three-dimensional objects held in the Pictures Collection of the National Library of Australia. The emphasis is on Australian material, with some material relating to New Zealand, Antarctica, Papua New Guinea and the



*Silver gelatin print, 17,7x12,7 cm, courtesy of Finnish Museum of Photography, Helsinki*

Pacific. The main time period covered is late eighteenth century to the present day. The collection includes thousands of portraits of significant Australians. The Pictures Collection contains approximately 45,000 paintings and 600,000 photographs; most of this material has been catalogued with individual descriptions or collection summaries. Of the material that has been catalogued, over 60,000 items have been digitised.

- **NIOD beeldbank**, URL: <<http://195.169.62.3/beeldbank/>>  
Dutch image base, containing a selection of 3,000 photos from the archives of the Netherlands Institute for War Documentation (in Dutch).
- **REX picture database, Royal Library of Denmark**, URL: <<http://rex.kb.dk/>>  
The 'Nationale Billedbase' enables users to view part of the photographic collection of the Royal Library. It contains about 50,000 images.
- **University of Michigan Collections**, URL: <<http://images.umdl.umich.edu/>>  
The UM Image Source offers a cross-collection search facility, enabling users to a wide number of pictorial collections. This service, set up by the Digital Library Production Service (DLPS), was one of the first services that developed a cross-collection search-and-retrieval facility.



## Further references

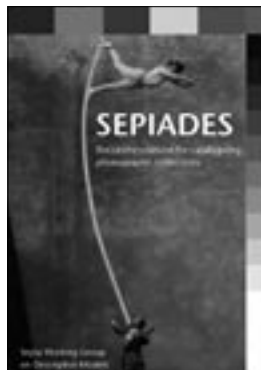
- Aasbø, Kristin, Isabel Ortega García, Anne Isomursu, Torsten Johansson, Edwin Klijn, SEPIADES. Recommendations for cataloguing photographic collections, Amsterdam 2003, URL: <<http://www.knaw.nl/ecpa/sepia/workinggroups/wp5/sepia-destool/sepiadesdef.pdf>>
- Deliverable 5.1: descriptive models for photographic materials, Stockholm 2001, URL: <<http://www.knaw.nl/ecpa/sepia/workinggroups/wp5/deliverable51.pdf>>
- European Commission on Preservation and Access (ECPA), URL: <<http://www.knaw.nl/ecpa>>
- Gateway for Resources and Information on Preservation (GRIP), URL: <<http://www.knaw.nl/ecpa/grip>>
- Klijn, E., SEPIA: Safeguarding European Photographic Images for Access' in: Cultivate Interactive issue 6, February 2002, URL: <<http://www.cultivate-int.org/issue6/>>
- Preserving Access to Digital Information (PADI), URL: <<http://www.nla.gov.au/padi/>>
- SEPIADES Working Group, URL: <<http://www.knaw.nl/ecpa/sepia/workinggroups/wp5/cataloguing.html>>
- Safeguarding European Photographic Images for Access (SEPIA), URL: <<http://www.knaw.nl/ecpa/sepia>>
- Technical Advisory Service for Images (TASI), URL: <<http://www.tasi.ac.uk/>>

*SEPIA partners:*

Biblioteca Nacional de España (Madrid)  
British Library (London)  
European Commission on Preservation and Access  
(Amsterdam)  
Finnish Museum of Photography (Helsinki)  
National Archives (Kew, Richmond)  
Netherlands Photo Museum (Rotterdam)  
Royal Library of Denmark (Copenhagen)  
Saechsische Landesbibliothek, Staats- und Universitaets-  
bibliothek Dresden (Dresden)  
Stockholm City Museum (Stockholm)

*SEPIA associate partners:*

Centre de Recherches sur la Conservation des Documents  
Graphiques (Paris)  
International Institute of Social History (Amsterdam)  
Netherlands Institute for Scientific Information Services  
(Amsterdam)  
Netherlands Institute for War Documentation (Amsterdam)  
Norwegian Archive, Library and Museum Authority (Oslo)  
Royal Library, National Library of Sweden (Stockholm)  
Royal Netherlands Academy of Arts and Sciences  
(Amsterdam)  
State Archives in Krakow (Krakow)  
Technische Universität Dresden, Institut für Angewandte  
Photophysik (Dresden)  
University College Dublin, Department of Archaeology  
(Dublin)



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