DIGITIZATION, DOCUMENTATION AND DISSEMINATION OF THE GREEK CULTURE, THE CASE OF DIMITRIOS KASLAS' ARCHIVES

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Abstract

Nowadays several historical and cultural archives are being destroyed, distorted, distained without the existence of relevant concern for conservation, digitization, documentation and dissemination of their precious material. The material of the "unexploited" historical and cultural records additionally constitutes a part of our country's cultural heritage. The digitization, documentation and dissemination of cultural collections in an important demand in our age of "the society of information".

One of the files which requires care of digitization, documentation and dissemination is the "Dimitrios Kaslas" archives which are being used as a case of study. It refers to unpublished material which occurs historical periods and facts dating back to the expedition in Asia Minor until the 1941 war.

The procedures of the project "Digitization, Documentation and Dissemination of the Greek Culture, The case of Dimitrios Kaslas' archives" focus on the digitization documentation and dissemination of the "Dimitrios Kaslas' archives, an unpublished historical and cultural file of priceless value concerning the era of the Greek-Italian war in 1941.

The archives include among others political and military photographs, postcards, maps, decisions, war orders, several manuscripts, political and military documents, protocols, identities, military textbooks, personal belongings.

INTRODUCTION

The procedures of the project "Digitization, Documentation and Dissemination of the Greek Culture, The case of Dimitrios Kaslas' archives" focus on the digitization documentation and dissemination of the "Dimitrios Kaslas' archives. Analytically the means to accomplish the above aims and goals are fulfilled in the project with a series of procedures relating with:

1. the digitization of the archives

At the stage of digitization the following thematic digitizations are performed:

- unpublished photographic material
- unpublished photographic material of the '41 front.
- maps from the '41 front
- decisions from the '41 front
- orders from the '41 front
- political photographs
- contemporary photographs
- newspapers
- extracts from relevant publications and articles
- diary from the '41 front
- edited videotape from a pilgrimage to 731 ridge
- personal belongings (3[d] scanning)
- photograph captions
- narrations (sound)

2. the documentation of the archives

At the stage of documentation the following procedures will be held:

- metadata – Metadata Protocol Dublin Core

- clarifications of the photographic material

- clarifications of the manuscript

- text – writing (history, battles, diary)

- quotation of historical texts

3. the appropriate preparation of the material to be disposed in order to create a multimedia network, as well as publications for the planning of educational programmes, for the creation of exhibitions etc. An indispensable presupposition for the disposal of the content in the appropriate form occurs:

- the dimensions of the files

- the volume of the files

- the transformation into the appropriate typo-files

- the desired analysis and files compression.

The current project is being carried out during the postgraduate essay in the Hellenic Open University, Faculty of Applied Arts, Graphic Arts – Multimedia.

METHODOLOGY

The procedures which were carried out during the digitization, documentation and protection of copyright of the "Dimitrios Kaslas' archives" were based on the following methods:

- documents photograph

In accordance with the guide of good practices for the digitization and long term preservation of cultural content of the Patras University (Galani, Kazantzi, Koulisianis, Papaterpos, Pavlidis & Styliaras 2005).

- sound –video

In accordance with the Concise Guide for the digitization of video and sound of the Laboratory for Digitized Process of Image, Video and Multimedia Systems of the National Metsovio Polytechnic School (Moshos, Hatzistamou & Aravani 2006).

- three dimensional representation

In accordance with the concise Guide for the digitization of three dimensional Mobile and Stable objects of the Cultural and Educational Institute, Application Centre of Communication Technology and Computing entitled DIGITECH III: Study of digitization technologies in three dimensions (Arnaoutoglou, Koutsioudis, Pavlidis & Hamzas 2005).

With regard to the documentation of metadata the accomplishment was performed in accordance with the "Dublin Core" pattern not only for Internet Applications (HTML, XML) bet also for simple access (Access).

The protection of copyright of the archives is accomplished with two different types of software: software for the creation of visible watermarking (Watermarking) and software for the process of image (Photoshop).

REALIZATION

In more details the guide of good practices which was created by the Laboratory of High Performance Computing Systems for Patras University (Operational Program "Society of information", 3rd Community Frame of Support) was adopted in the current project for the digitization of documents and manuscripts (Galani et al. 2005). According to this Guide the life- cycle of the digitization includes the proceeding stages:

1) planning of the digitization work
2) management of the digitization works
3) preparation for the digitization
4) digitization
5) preservation of the digitized content
6) documentation of the file – metadata introduction
7) actions for dissemination, promotion

8) securing of copyright

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                        ┌─────────────────┐
                        │    Original     │
          ┌·············│    Planning     │
          :             └─────────────────┘
          :                      │
          :             ┌─────────────────┐
          :             │  Selection of   │
          :             │    Content      │
          :             └─────────────────┘
          :                      │
          :             ┌─────────────────┐
          :             │ Infrastructure –│
          :             │ Environment of  │
          :             │   Digitization  │
          :             └─────────────────┘
          :                      │
          :             ┌─────────────────┐
          :             │  Handling of    │
          :             │   Prototypes    │
          :             └─────────────────┘
          :                      │
  ┌───────────────┐     ┌─────────────────┐   ┌───────────────┐
  │ Management of │     │   Digitization  │───│ Documentation │
  │   the work    │     └─────────────────┘   └───────────────┘
  └───────────────┘              │
          :             ┌─────────────────┐
          :             │  Documentation  │
          :             └─────────────────┘
          :                      │
          :             ┌─────────────────┐
          :             │   Storage -     │
          :             │  Preservation   │
          :             └─────────────────┘
          :                      │
          :             ┌─────────────────┐   ┌───────────────┐
          └············>│   Copyright     │───│ Dissemination │
                        │   Protection    │   │  - Promotion  │
                        └─────────────────┘   └───────────────┘
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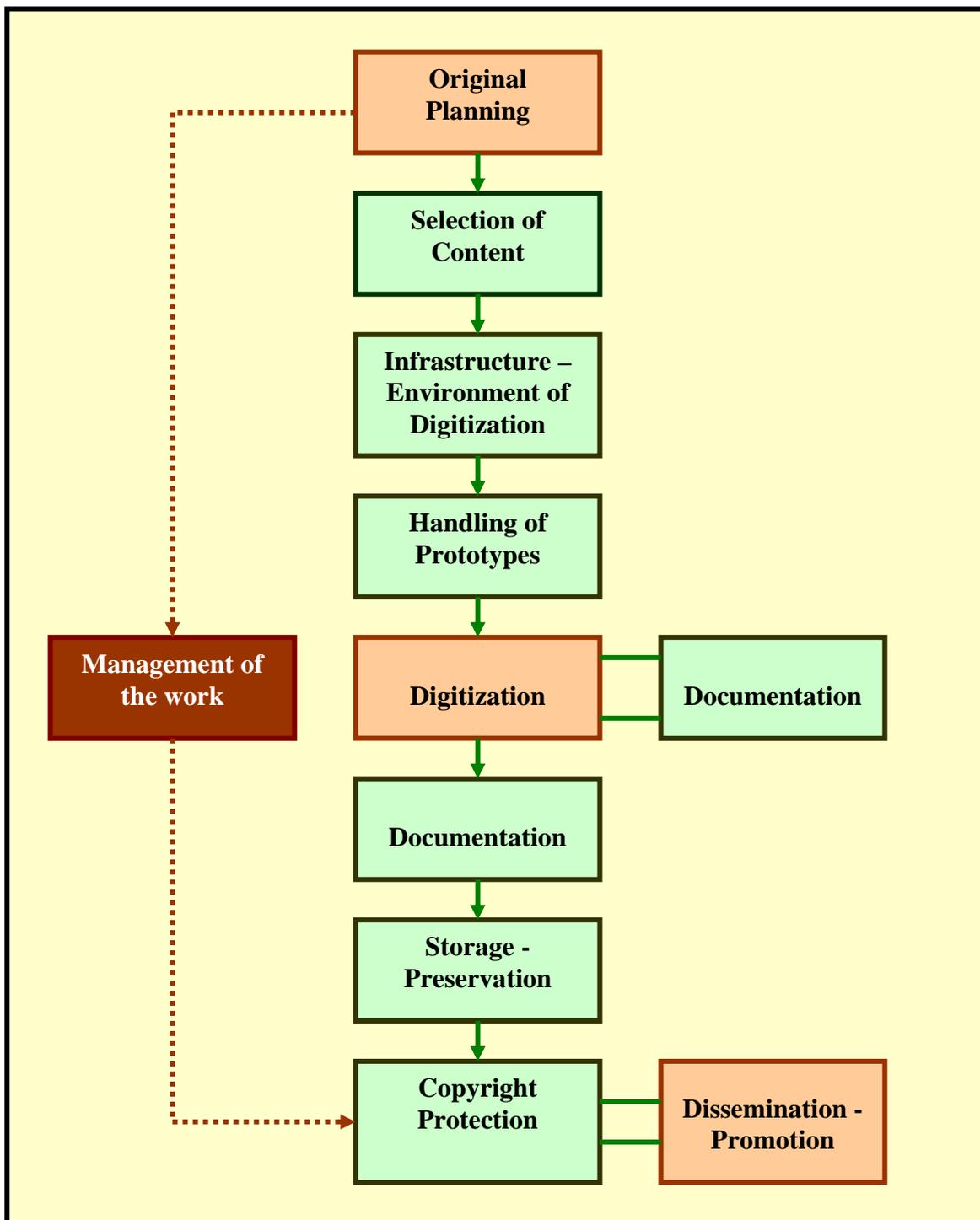
Diagram 1: The life-cycle of digitization (Galani et al. 2005)

DIGITIZATION OF DOCUMENTS AND MANUSCRIPTS

The type file which was used for the storage of digitized copies is TIFF. The TIFF files for the time being perhaps present the most reliable platform concerning the ability to transfer the digital files into new types because they are not compressed and coded. For preservation and security reasons the produced digitized copies were stored in three different storage types (portable hard disc, cd-rom, hardware of the digitization computer). Apart from the TIFF digitized versions of each digitized file two other sorts of it were created with the aid of the image process software in the form of JPEG and PNG: an image in condensation for preview in JPEG, and an image appropriate for access through the internet in PNG type file. More analytically all the three sorts have the following applications and characteristics:

- Digital copy

The digital copy presents the most reliable representation of the information which is included in the prototype without being processed and compressed. The digital copies in TIFF form act long term as the files from which all the rest digital sorts of the prototype will come out. The size of these files is of 20-40 MB and their analysis is of approximately 600 dpi.
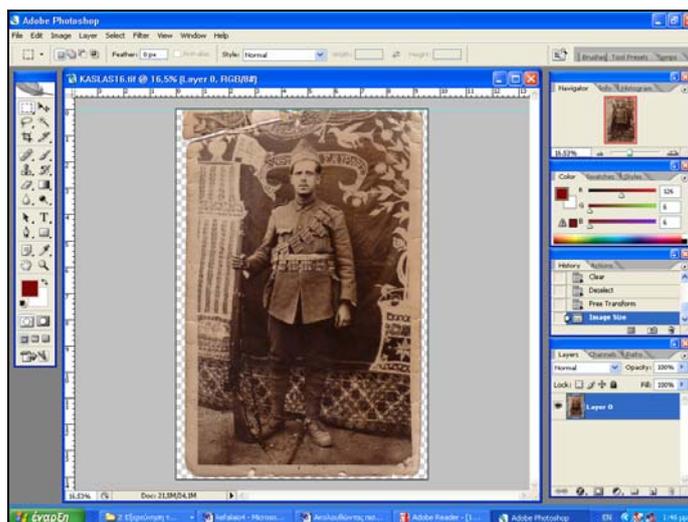
Image1: Digitized picture in TIFF form in Photoshop CS2
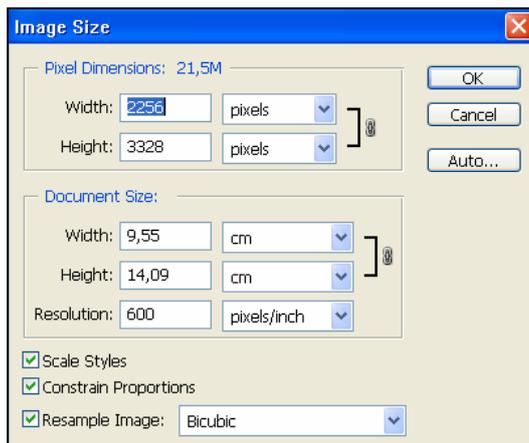
Image2: The image size from the window of the Photoshop CS2 with 41.2MB capacity

- **Internet image**

The images which were created for the promotion of the digitized copy on the internet are of satisfactory quality for the public. The file analysis which will be used on the internet is 159 (dpi). The volume of the files in the PNG form allows for fast connection of high speed on the user's side.
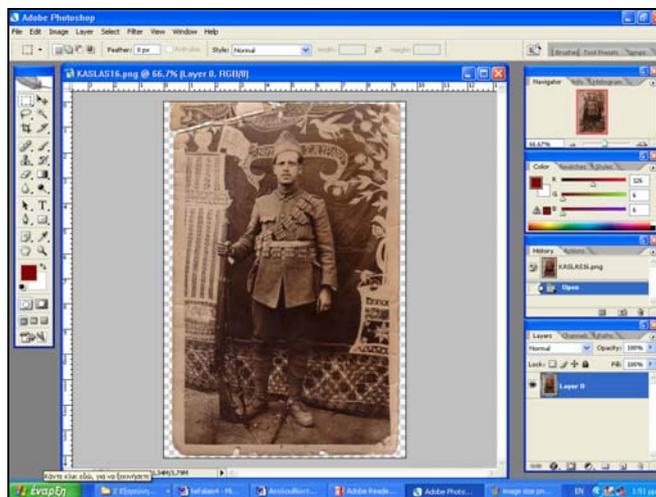

Image 3: Digitized image in PNG form in Photoshop CS2
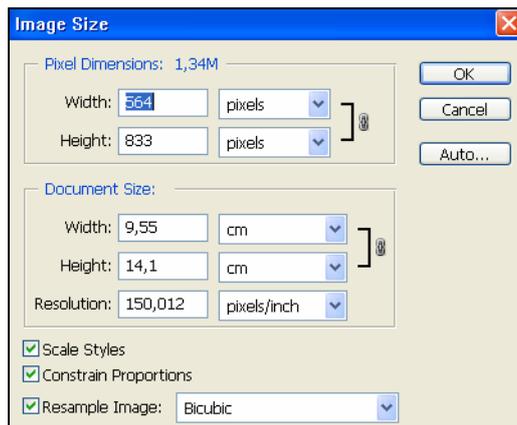
Image 4: The image size from a window of the Photoshop CS2 with 801KB capacity

- **Image for preview**

The images for preview which were created are condensed images in the appropriate size, in order to be presented immediately on the internet so as to enable the internet users to decide whether they will see the larger image or not. The files of the preview have been stored in JPEG form and the resolution is of 72dpi.
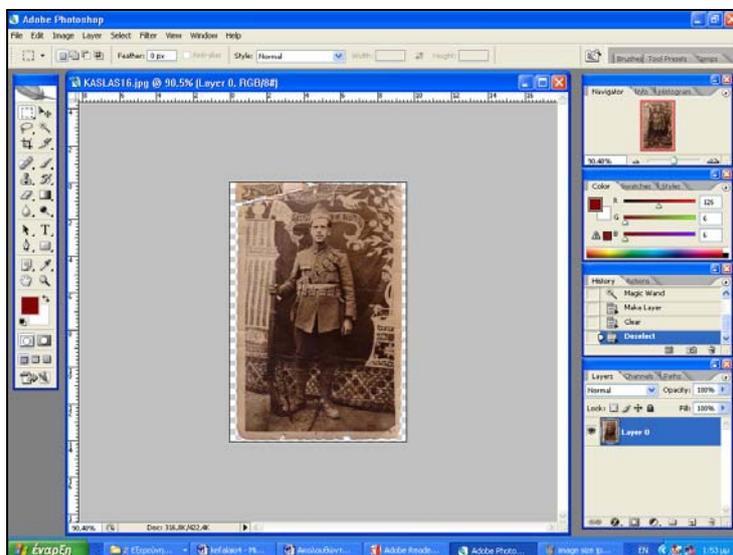
Image 5: Digitized image in JPG form in Photoshop CS2

8
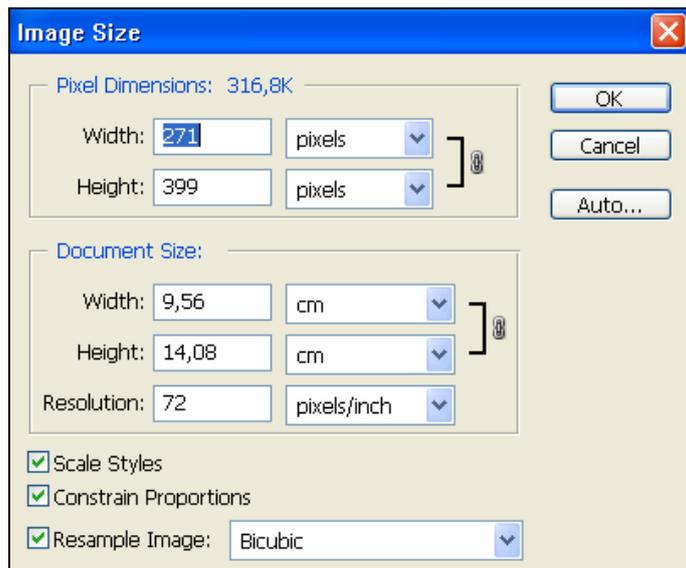
Image 6: The image size from a window of the Photoshop CS2 with 58,2 KB capacity

DIGITIZATION OF PHOTOGRAPHS

The usage of digital cameras during the digitization of the D. Kaslas archives was performed in two stages:

a) Exterior photographing

It was performed with a semi-professional digital camera (Nikon D40) with auto focus and a file format in "JPG" with high resolution.

b) Material to be photographed

The material to be photographed concerned to types of material:

- personal belongings

The photographing was performed inside with a Nikon D200 professional camera equipped with a 18200 Nikon DX 3,5 -5,6 wide-ankle lens and a flash in one meter distance with the aid of additional lighting.

- maps during the Greek-Italian war in A3 size

Image 7: Adjustments of the digital camera before the photographing of the objects

TECHNIQUES AND ADJUSTMENTS FOR THE THREE DIMENSIONAL DEPICTION

The three dimensional digitization of objects from the "D.G.Kaslas archives" collection was conducted at the premises of "Future Technology Systems Company". The "FTS" S.A. was founded in 1996 in Volos, aiming at offering services in the field of Industrial Design and the development of innovative products. The company specializes in the application of High speed prototyping, Inverted Design, CAD/CAM/CIM, CNC etc.

In the beginning for cost reasons two objects, a 1900 pocket watch and an army whistle were digitized. More specifically the copy of the above objects was accomplished with a three dimensional objects Laser scanner with 16 micro precision and with complete security because there was no contact with the objects.

The three dimensional scanner consists of a jointed arm (cimcore) full of functional co-ordinates on which a laser head is placed. The laser head is enabled to record 23.000 points a second, thus creating the geometry of the object.

Image 8: Jointed arm (cimcore) and Laser head (METRIS)

Image 9: Laser head (METRIS)

The scanning and geometry creation and object editing software are the "KUBE V.13.0 Build 250". The software for the production of "Texture mapping" is the "Deep UV – Deep Paint" of the "Right Hemisphere" company. The final given files of the digitization are in the form of: VRML, OBJ, Web Publishing through "Hemisphere".

More analytically the stages of the three dimensional digitization and process include:
Step 1st
Scanning of the geometry of the object.

The object is scanned with the aid of the Laser Head (METRIS) in multiple points with the flexibility   which is offered by the jointed arm (cincore) full of functional

co-ordinates. The object is systematically scanned and "built" after we have originally begun from the cloud of the points of the object and later ended up to its final geometry.
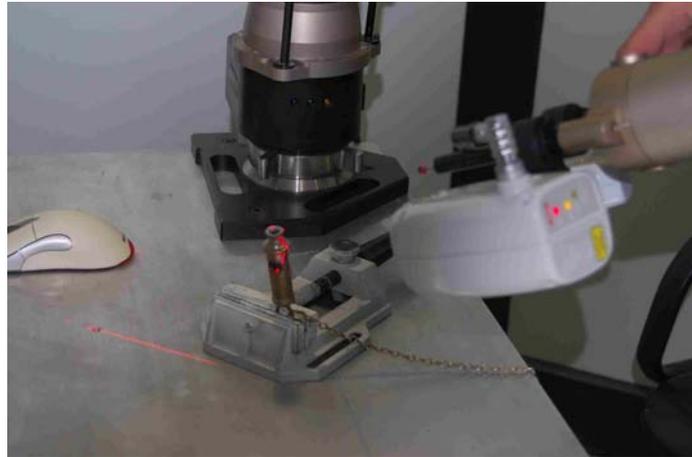
Image 10: Scanning of the whistle through the Laser Head.
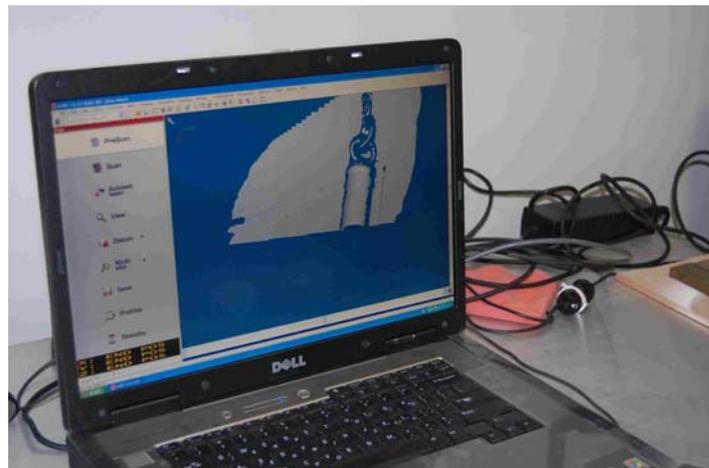
Image 11: The result of the scanning on the computer screen for the object (whistle)

Το αντικείμενο σαρώνεται συστηματικά και τελικά «χτίζεται» αφού αρχικά ξεκινήσουμε από το νέφος των σημείων του αντικειμένου και στην συνέχεια καταλήξουμε στην τελική του γεωμετρία.
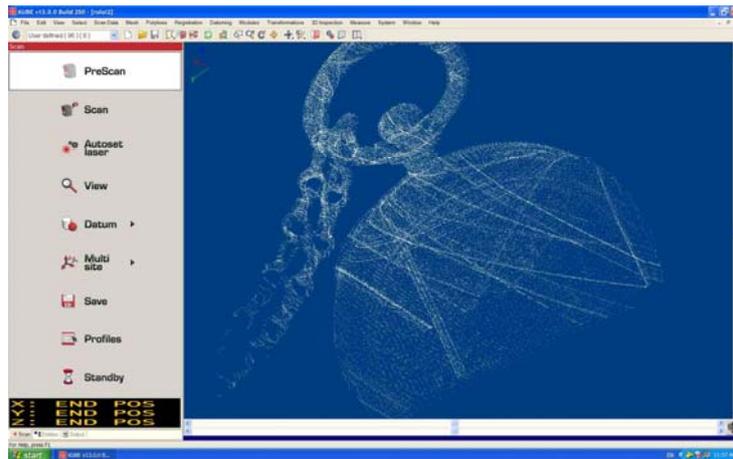
Image 12: Cloud of points for the pocket watch object
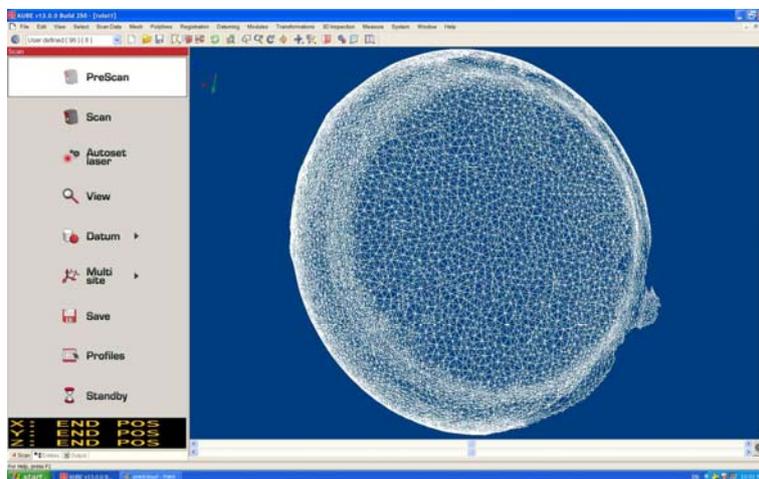
Image 13: Polygonal grid for the pocket watch object
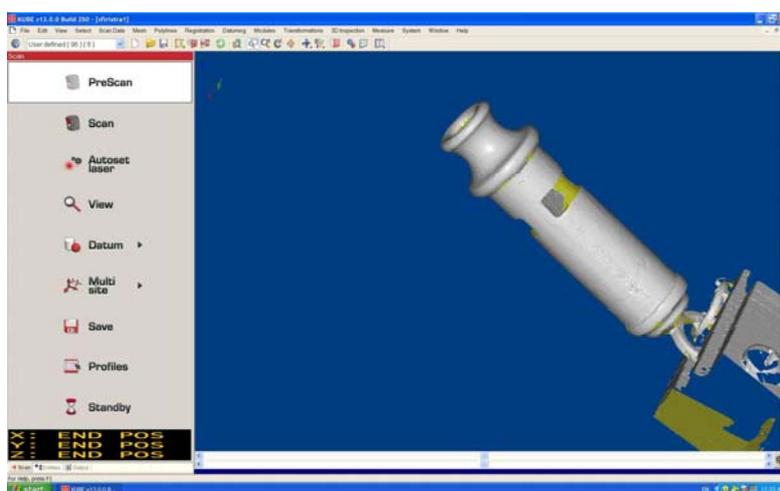
Image 14: The whistle object after the three dimensional multiple scanning
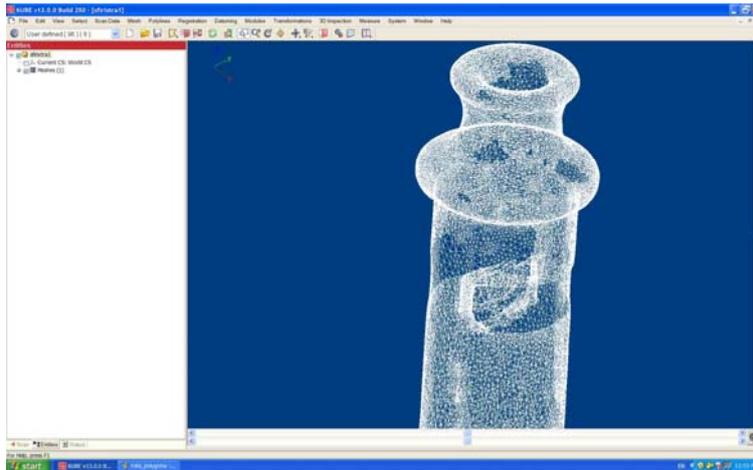
Image 15: Polygonal grid for the whistle object

Step 2nd:

Further on we make the necessary corrections and the necessary editing through the "KUBE V.13.0 Build 250" software.

Step 3rd

In the next stage the photographing was performed inside with a Nikon D200 professional camera equipped with a 18200 Nikon DX 3,5-5,6 wide-ankle lens and a flash in one meter distance with the aid of additional lighting.

Step 4th

In the last stage the "Texture Mapping was accomplished through the software "Deep UV-Deep Paint" of the "Right Hemisphere" company.

TECHNIQUES AND ADJUSTMENTS FOR THE SOUND PROCESS

The installation and usage of the specialized programme for the sound process called "Sound Forge9" has been essential for the digitization and process of the digitized sounds. The "sound Forge" software OF the "Sonic Foundry Inc" is one of the most popular tools as it is handy and offers a wide range of abilities for digitization and sound process.

More analytically the following were performed with the aid of the above mentioned software:

- recording (digitization) of the sound with the use of a microphone
- sound process

TECHNIQUES AND ADJUSTMENTS FOR THE VIDEO PROCESS

The creation of the video on the computer was initially performed in a digitized way (through a video camera) in order to create directly the digitized files data. However there have been cases when the video process and the creation of parts from the ready made material which concerns the pilgrimage to the Hill 731 were necessary. For that reason the video process software, "Adobe Premiere 7 Pro" was used.
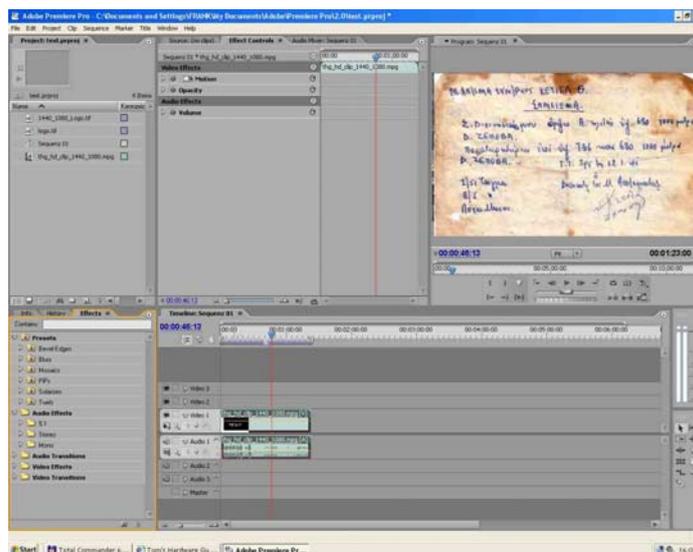

Image 16: Video process with the aid of the "Adobe Premiere 7 Pro" software.

METADATA

The application of the Dublin Core metadata pattern is attained through a database called Access. The metadata are in their basic form stored in an Excel file so as to be used in all different forms of attainment on the internet and on other applications as well.
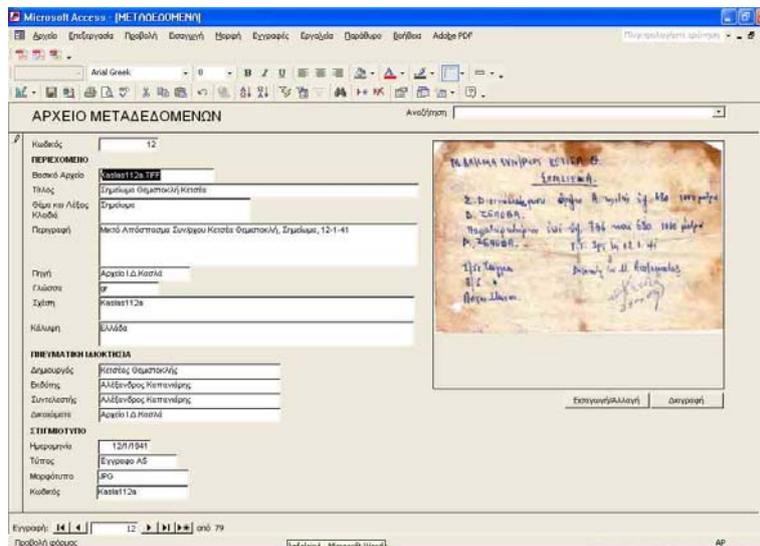
Image 17: Metadata projection on the Mikrosoft Access application

Through the database we can project for every record not only the preview image but also the 15 elements of the Dublin Core metadata pattern. Further on the user has the ability and only if he wishes to request any object of the file he wishes from the original files (in TIFF form) with even higher analysis as long as he reads the metadata and watches the relevant preview.

Apart from the metadata recording in the form of an excel sheet and database (access) the metadata files can be recorded in both XML and HTML forms for internet usage. More analytically the creation of a code in XML form for metadata of the "D.G.Kaslas archives" and more specifically the example are presented in the following code:

```xml
<?xml version="1.0" ?>
<metadata          xmlns="http://www.ukoln.ac.uk/metadata/dcdot/"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.ukoln.ac.uk/metadata/dcdot/
   http://www.ukoln.ac.uk/metadata/dcdot/dcdot.xsd"
   xmlns:dc="http://purl.org/dc/elements/1.1/">
<dc:title xml:lang="en">Φωτογραφία</dc:title>
<dc:creator>Δημήτριος Κασλάς</dc:creator>
<dc:subject xml:lang="en">Μικρά Ασία</dc:subject>
 <dc:description xml:lang="en">Έφεσος 21 Μαρτίου 1921 – Δημήτριος
   Κασλάς</dc:description>
```

```
<dc:publisher>Αρχείο Ι.Δ.Κασλά - Ε.Α.Π.</dc:publisher>
<dc:contributor>Αλέξανδρος Καπανιάρης</dc:contributor>
<dc:date>21/3/1921</dc:date>
<dc:type>Image</dc:type>
<dc:format>TIFF</dc:format>
<dc:identifier>kaslas16</dc:identifier>
<dc:source>Αρχείο Ι.Δ.Κασλά</dc:source>
<dc:language>gr</dc:language>
<dc:relation>kaslas 16b</dc:relation>
<dc:coverage>Ελλάδα</dc:coverage>
<dc:rights>Αρχείο Ι.Δ.Κασλά</dc:rights>
</metadata
```

COPYRIGHT

The copyright protection is mainly focused on the projection of the digitized records on the internet because it runs the risk of creating copies for trade purposes (Galani et al. 2005). The basic care for the copyright protection of the "D.G.Kaslas archives" has been the creation of digitized substitutes for the projection on the internet through digitized images in very low resolution (75 till 150 dpi) Thus the exploitation of the digitized objects for other usages is impossible, like other editions.

Moreover another means of copyright protection concerns the projection of images of higher resolution. The access to these images will be allowed only to authorize users (e.g. researchers and members of groups of special interest) under relevant communication and permission.

The application of visible watermarking on every image is another way to guard copyright of the "D.G.Kaslas archives". Visible water markings with a few records were created with the aid of Watermarking software (http:/bytescout.com/watermarking.html), in order to be safeguarded that it will work according to the right way and it doesn't cause annoying consequences.

Types of visible water markings using watermarking software are depicted in the following table 1:

Text Fits Page	Diagonal Text Fits Page	Text	Vertical Text
Annotation	Logo Image	Logo Image with Text	

Table 1: Types of visible water markings using watermarking software

Image 18 Application of visible watermarking in the centre using water marking software on the photograph-identity of the "D.G.Kaslas archives"

Apart from the usage of the "Watermarking" software, a visible watermarking was created using the Adobe Photoshop software. More specifically visible water markings were created along with the creation of the step "pattern" and the creation of the appropriate layers as in the following image.
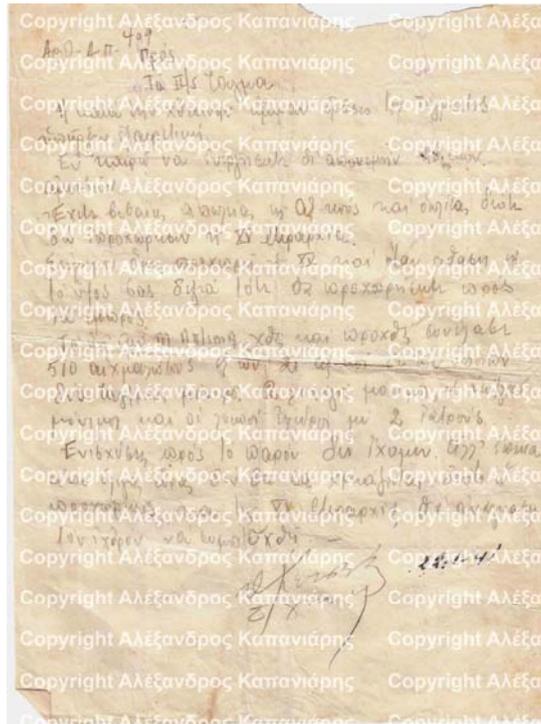
Image 19: Application of a visible watermarking on the whole manuscript of the "D.G.Kaslas" archives using Adobe Photoshop software

CONCLUSION

In conclusion through the current project the analysis, planning and realization of digitization, documentation and dissemination of archives of historical-cultural nature like the "D.G.Kaslas archives" are accomplished.

BIBLIOGRAPHY

1. Moshos K., Hatzistamou H. & Aravani F. 2006, Concise Guide for the digitization of Video and sound, (on line), Athens: Research University Institute of Communication Systems and Computers, National Metsovio Polytechnic School, Measure: 1.3 Documentation, Exploitation and Dissemination of Greek Culture, Operational Program "Society of Information" 2000-2006, 3rd Community Frame of support, Accessed at: <http://www.infosoc.gr/NR/rdonlyres/C84A5115-5E1A-4087-9FFC-225CB2253421/ 1179/ emp_episey_v2b.doc> [7 March 2008]

2.Arnaoutoglou F.Koutsioudis A., Pavlidis G. & Hamzas H. 2005, Guide of digitization of three Dimensional Mobile objects (on line), Xanthi: Cultural & Educational Technlogy Institute, Operational Program "Society of Information" 2000-2006, 3rd Community Frame of support Accessed at: : <http://www.ipet.gr/digitech/docs/objects.pdf > [7 March 2008].

3.Galani E., Kazantzi A. Koulisianis M, Papaterpos H. Pavlidis N. & Styliaras G., 2005, Guide of Good Practises for the Digitization and Long term Preservation Of Cultural Content - Good Practices and Practical guidelines (on line), Patras: Laboratory of High Performance Computing Systems, Patras University, Measure 1.3 Documentation Exploitation and Dissemination of Greek Culture, Operational Program "Society of Information" 2000-2006, 3rd Community Frame of support, Accessed at: <http://digitization.hpclab.ceid.upatras.gr> [7 March 2008]