Guidelines on Digitisation

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Premise

Through various strategies and instruments and in compliance with current legislation on copyright, the University of Padova Library System aims to preserve and make accessible on Internet individual documents as well as important digitised collections related to a broad spectrum of disciplines, in the wake of scientific and experimental tradition that has always characterised our University.

To promote its own ancient, prestigious documentary heritage and to meet customer needs for quick and easy access to digital information content, the University of Padova Library System has established the Phaidra platform: a digital object management system with long-term archiving functions to meet specific aims for the conservation and access to digital collections.

In principle, all digitisation projects must be consistent with one or more of the following general purposes:

- valorise the documentary heritage preserved at the University of Padova and, ultimately, in major city libraries (public, ecclesiastical, etc.)
- expand public access to segments of Paduan documentary heritage relevant for scientific and cultural purposes
- promote interdisciplinary studies and promote collaboration between different local institutions
- promote knowledge of local or unique collections, through their widespread dissemination
- create virtual collections through the integration of various formats or materials located in different places
- limit the direct consultation of original documents in particularly critical conditions
- facilitate access to material which is difficult to attain
- ensure that the documentary material is available to future generations of students and scholars

This document is intended to be a reference tool for use of Phaidra and therefore refers to a set of procedures for digitisation of two-dimensional formatted documents, consistent with best practices and national and international standards for the quality reproduction of documents.
1 Objectives

Defining the objectives of a digitisation project makes it possible to establish the operational framework of the project from the beginning. The reasons and purposes can be various:

- to expand access to documents and their content
- to improve services to users, with the possibility of consulting resources collected and sorted into virtual collections, physically distant, inaccessible, little known
- to reduce the consultation of original documents in particular conditions (ancient and valuable documents, fragile, in poor condition, in high demand, difficult to handle)
- to develop collaborative activities with other institutions by creating virtual collections with greater access

2 Selecting documents

Selecting the documents to be digitized, attention must be paid to the laws on copyright and privacy. It is necessary to consider the ownership of the rights, the presence of personal and sensitive data, the final destination of the digitization. To resolve any critical issues it will be necessary to resort to the appropriate solutions (request for disclaimers, etc.), possibly also resorting to legal support.

The documents must be chosen based on the selection criteria\(^1\) defined by the project. The selection criteria generally evaluate:

- historical and cultural value
- uniqueness and rarity
- high demand
- restricted access due to the condition, value and location
- value added through online access, the creation of virtual collections, increased interest in little known or unknown material
- generally, works already digitized in other collections and accessible to the public through the network are excluded in order to avoid duplication and contain costs

In some cases, it may be useful to carry out an inventory of documents for identifying the quantity, type, size, state of preservation, and the net asset value of documents and any other information. The project sheet (see Attachment 2) may be used as a reference.

This information may be used for subsequent activities of conservation, cataloguing and digitization.

3 Preservation

Digitisation does not replace the commitment to the care and preservation of the originals.

It is important that an evaluation of the original state of preservation be undertaken before the digitisation and that any treatment on documents be performed after a survey by expert staff.

The restoration of the documents must be authorised by the relevant Superintendent and communicated to the Rector. The return of documents should be reported to the Rector and the Superintendent.

4 Digitisation

Digitisation is the process of transformation/conversion of an analogue object (text, image, audio, video) into a digital format, interpretable by a computer.

The nature and size of the originals determine the choice of the recording system, the lighting system and methods of treatment (transport, opening of the volumes, handling).

The quality of images defined in the project determines the hardware and the recording software requirements, the acquisition times and image processing, and the memory usage in the storage media to manage and maintain.

4.1 In-house or outsourced digitisation

The choice of digitisation within the institution (in-house) or the use of outside services (outsourcing) has to consider the advantages and disadvantages of the two methods.

<table>
<thead>
<tr>
<th>In-house digitisation</th>
<th>Outsourced digitisation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advantages</strong></td>
<td><strong>Disadvantages</strong></td>
</tr>
<tr>
<td>- having direct control of the whole process</td>
<td>- the institution pays for the product, usually at an established price per image</td>
</tr>
<tr>
<td>- learning by doing</td>
<td>- containment of costs and limited risks</td>
</tr>
<tr>
<td>- improving on-going requirements rather than establishing them in advance</td>
<td>- the supplier can handle large amounts of material</td>
</tr>
<tr>
<td>- ensuring security, proper handling and accessibility of the material</td>
<td>- the supplier absorbs the costs of expertise, training and technological obsolescence</td>
</tr>
<tr>
<td>- the institution pays for expenses instead of for products, which include training costs, technological obsolescence and downtime</td>
<td>- the institution eliminates one phase of the process; it does not develop in-depth knowledge on digitisation</td>
</tr>
<tr>
<td>- investment in purchasing and maintaining equipment</td>
<td>- issues of security, transport and handling of specimens</td>
</tr>
<tr>
<td>- need for specialised staff</td>
<td>- need for specialised staff</td>
</tr>
</tbody>
</table>
### Recommendations

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>In-house Service</th>
<th>Outsourcing</th>
</tr>
</thead>
<tbody>
<tr>
<td>The in-house service is recommended if:</td>
<td>- the collection cannot be moved outside the institution - the digitisation work is very easy - there are already specialised staff and existing equipment</td>
<td>Outsourcing is recommended if:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- it is not possible for the originals to be digitised within the institution - the planning involves a large quantity in a short timeframe - there are constraints of space, infrastructure and personnel</td>
</tr>
</tbody>
</table>

Outsourced digitisation can be performed in the premises of the library or at the selected company’s location. If the digitisation is performed at a company, the moving of documents must be authorised by the Rector and the relevant Superintendent. The return of documents must be communicated to the Rector and the Superintendent.

The flow of outsourced digitisation activities includes:

- examination of the technical and logistical aspects
- definition of the scanning parameters
- preparation of a market study or a tender
- possible arrangement of the digitalisation set
- preparation of documents
- training of staff and operators involved for quality control
- creation of a prototype
- digitisation
- quality control
- correction of defects and errors
- relocation of documents
- product delivery
- final quality control

The flow of in-house digitisation activities includes:

- examination of the technical and logistical aspects
- definition of the scanning parameters
- market investigation or tender for the purchase of the necessary equipment
- training of staff and operators involved
- arrangement of the digitisation set
- preparation of documents
- creation of a prototype
- digitisation
- quality control
- correction of defects and errors
- relocation of documents
4.2 Choice of equipment

The data acquisition system (light source, optics, sensor, capture and calibration software) should ensure the image quality required by the project and not damage the original documents. In particular, the lighting system must be cold-light without emission of UV and IR. For ancient or valuable documents the use of suitable supports is required in order to not damage the document (facing the surface to be scanned upwards and using a tilting platform or V support).

These are some general indications on scanning systems:

**Flatbed scanner**: for single-sheet documents, or bound documents that can be opened easily: printed materials (e.g. leaflets, posters, brochures), manuscripts (e.g. letters), maps in good condition, printed music, prints (e.g. engravings, etchings, lithographs), pen and ink drawings without added watercolour or gouache (e.g. cartoons), photographic material (e.g. gelatin prints in black and white and in colour, albumen prints).

**Film Scanner, negatives and slides**: for films, negatives and slides.

**Planetary scanner or digital camera**: for bound volumes (e.g. books, albums, printed music, atlases), fragile documents, oil paintings, most works of art on paper (e.g. watercolours, drawings), graphic material and artworks made with flaked and friable substances (e.g. crayons, charcoal, soft pencil), watercolours with thick drafting, tempera or with paints, large or fragile maps, manuscripts (e.g. bound diaries, folded documents), parchments, photographic material (e.g. large prints, historical photographic processes, such as daguerreotypes and ambrotypes), three-dimensional material (e.g. textiles, sculptures, objects).

The University Library System also uses a large-format flatbed scanner, a prototype created by a spin-off of the University of Padua.

4.3 Digital acquisition

The result of digitisation is the creation of files intended for long-term storage, “master” files, and files resulting from further processing, “derived” files, intended for use by users, typically via the Web.

The master file (“preservation master file” or “archival master file”) is the file that represents the best-copy output from digitisation, where “best” means that it meets the objectives of a particular project. These objectives may vary depending on the type of document. The criteria to be used in creating the master file must ensure faithful reproduction of the document in view of its long-term digital preservation or the need for high-quality printing, ensuring that there be no need to repeat the digitisation in the future.

Derivative files are produced from the master file and optimised for different fruition by the user, for example for display in a browser, to be converted to text via OCR, or for viewing on a dedicated
workstation. They are normally resized and compressed, even with loss of information (i.e. JPEG images, MP3 audio format), for more convenient use achieved without excessive loss of quality. Below are guidelines for the digitisation of image files, i.e. the product of the digitalisation of text, graphic or three-dimensional documents. For other types of files, for example audio and video files, please refer to the document “Recommended file formats for long-term archiving and for web dissemination in Phaidra”.2

Image files

The following specifications are to be taken as general guidelines, to be tailored in each case to achieve the best compromise between quality and cost. High quality images, both in terms of resolution and in terms of colour depth, also imply higher costs of acquisition (equipment and qualified personnel) and of management (file size to be kept). On the other hand, the choice of the digital parameters must be sufficient enough to faithfully reconstruct the level of detail of the document.

The sampling density, or the number of pixels that represents the unit of length, must therefore be assessed not only based on the size of the document, but also based on the importance of the original document and the available resources.

“It is important to keep in mind that there are multiple factors that influence image quality: among these, in addition to the sampling density, we maintain colour accuracy, dynamic sensor and its noise. Establishing a certain sampling density is therefore conceptually wrong because, depending on the shooting system that is used, equal to pixels-per-inch, the final quality of the scan can be very different.”3

Master file

- The image is archived as it has been captured by the scanning instrument.
- The document must be taken in its entirety. Around the document, it is necessary to leave a border of a few millimetres in order to make it possible to read the contours of the document.
- For books, an image file is produced for each page: each side, recto and verso, of each page, including flyleaves, even if there is no information, and blank pages; all parts of the binding: endpapers, spine, textblocks, (in order to show headbands, clasps, hinges, borders). For maps, photographs and archive material, the verso is scanned only if there is information present.
- If the original is mounted on a support which contains information (e.g. a photograph mounted on cardboard with the photographer’s trademark), digitisation must also include the support.
- Each document must be scanned alongside a chromatic scale, a greyscale and a metric scale, placed outside of the reproduced image and within the overall frame. In the case of

2 http://phaidra.cab.unipd.it/static/EN-file-formats.pdf
3 F. Lotti, M. Lunghi, G. Trumpy, Procedure per un laboratorio fotografico digitale, 2009
volume, it is sufficient to place the scale once on a paper or page (which will be scanned
two times, one with the scale and one without).

- In the presence of scratches, wormholes or oxidation of the inks, the papers must be
  masked with white paper in order to avoid capturing the underlying content.

Depending on the data capture tool, the master files can be of two different types:

- TIFF images
- RAW images (so-called digital negatives), in one of several proprietary camera formats
  such as NEF for Nikon or CR2 for Canon

If the master was RAW format, a copy should be made in an uncompressed TIFF 6.0 format to
ensure long-term readability in commonly used software. These TIFF images must be faithful to
the original RAW images and therefore should not be processed, except for colour correction, an
operation that is performed with greater effectiveness and security with RAW files.

**TIFF master**

<table>
<thead>
<tr>
<th>Type of document</th>
<th>File format</th>
<th>Colour</th>
<th>Optical resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Graphic material</strong> (Photography, Prints, Drawings, Paintings, Posters, Maps, Geographic Maps...)</td>
<td>TIFF 6.0, uncompressed</td>
<td>Colour profile “Adobe RGB” to 24 bit (8 bits per channel). For documents requiring the highest quality: Colour profile “ProPhoto RGB” to 48 bit (16 per channel)</td>
<td>Format up to A4: 600 dpi. Larger than A4: 400 dpi. For large and small formats, adjust the resolution in order to get the best results</td>
</tr>
<tr>
<td><strong>Books, journals and manuscripts, rare or valuable (e.g. illustrated or painted) or with poor readability (faded characters, low contrast, margin notes in pencil, stained)</strong></td>
<td>TIFF 6.0, uncompressed</td>
<td>Colour profile “Adobe RGB” to 24 bit (8 bits per channel). For documents requiring the highest quality: Colour profile “ProPhoto RGB” to 48 bit (16 per channel)</td>
<td>Format up to A4: 600 dpi. Larger than A4: 400 dpi. For large and small formats, adjust the resolution in order to get the best results</td>
</tr>
<tr>
<td>Books, journals, manuscripts, typed and mimeographed, not rare nor valuable, easily readable</td>
<td>TIFF 6.0, uncompressed</td>
<td>Colour Profile “Adobe RGB” to 24-bit (8 bits per channel) or to 16-bit greyscale</td>
<td>Format up to A4: 400 dpi. Larger than A4: 300 dpi. For large and small sizes, adjust the resolution in order to get the best results</td>
</tr>
<tr>
<td>Negatives, Black and White Slides</td>
<td>TIFF 6.0, uncompressed</td>
<td>16-bit greyscale</td>
<td>From 35 mm to 10x12 cm: 800-2800 with a resolution based on 4000 pixels on the longest side. From 10x12 to 20x25 cm: 800-1200</td>
</tr>
</tbody>
</table>
Negatives, Colour Slides

| Negatives, Colour Slides | TIFF 6.0, uncompresed | Colour profile “Adobe RGB” to 24 bit (8 bits per channel). For document requiring the highest quality: Colour profile “ProPhoto RGB” to 48 bit (16 per channel) | From 35 mm to 10x12 cm: 800-2800 with a resolution based on 4000 pixels along the long side. From 10x12 to 20x25 cm: 800-1200 with a resolution based on 6000 pixels along the long side. > 20x25 cm: 800 with a resolution based on 8000 pixels on the longest side. |

Figure 1: Paper size (mm). A0–A4 of Series A, International Standard ISO 216

Derivative files

Chromatic scales, greyscales and metric scales should be removed from derivative files. Derivative files must be:

- Balanced for brightness, contrast and saturation in order to correct any chromatic aberrations due to the conditions of capture, on the basis of samples resulting from the colour scales and greyscales. This balancing should aim to achieve faithful reproduction of the original colour characteristics, not to an arbitrary aesthetic improvement.

- Straightened and cropped for the best visualisation

The choice of the type of derivative file to be created depends on the needs of the digitisation project, taking into account the availability of “in-house” tools and skills able to process the files as
needed, of the different intended uses, as well as the quality of the images that you wish to upload in Phaidra.

The characteristics of the derivative files for different uses are described in the following tables.

**High-quality JPEG**

<table>
<thead>
<tr>
<th>Type of document</th>
<th>File format</th>
<th>Size</th>
<th>Colour</th>
<th>Optical resolution</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>All documents in the Master File Table</td>
<td>JPEG compressed at the best quality (100%)</td>
<td>The same of master</td>
<td>Colour profile sRGB IEC-61966-2.1 and depth of 24 bits (8 bits per channel)</td>
<td>300 dpi</td>
<td>For high-definition viewing of images in Phaidra. It can be adopted for maps and other objects requiring viewing of small details.</td>
</tr>
</tbody>
</table>

**Medium quality JPEG**

<table>
<thead>
<tr>
<th>Type of document</th>
<th>File format</th>
<th>Size</th>
<th>Colour</th>
<th>Optical resolution</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>All documents in the Master File Table</td>
<td>JPEG compressed at the best quality (100%)</td>
<td>Approximately 2400 pixels on the longest side</td>
<td>Colour profile sRGB IEC-61966-2.1 and depth of 24 bits (8 bits per channel)</td>
<td>300 dpi</td>
<td>For average quality printing or uploading to Phaidra</td>
</tr>
</tbody>
</table>

**Low quality JPEG**

<table>
<thead>
<tr>
<th>Type of document</th>
<th>File format</th>
<th>Size</th>
<th>Colour</th>
<th>Optical resolution</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>All documents in the Master File Table</td>
<td>JPEG compressed at a quality between 90% and 100%</td>
<td>Approximately 1500 pixels on the longest side</td>
<td>Profilo colore sRGB IEC-61966-2.1 e profondità di 24 bit (8 bit per canale)</td>
<td>150 dpi</td>
<td>For uploading to Phaidra</td>
</tr>
</tbody>
</table>
Texts to be subjected to OCR (*Optical Character Recognition*)

If you want to make text-searchable files available, the digitised images must be subjected to OCR. In this case, you can create a searchable PDF, as well as various other formats depending on your needs (TXT, ODT, DOC, EPUB, MOBY...)

If you want to upload a “Book” in Phaidra as searchable text:

- the OCR must be performed at the same image size as those that will be uploaded to Phaidra
- an XML file must be created for each image with the same image file name, following formatting described in *Attachment 1*
- a searchable PDF must be created

### 4.4 File Names

In general, the name of each file will be a character string composed of several parts, having therein the information necessary to uniquely identify the project document to which the image refers. File names will be completed with the appropriate extension (tif, jpg, pdf, xml).

In mass storage, image files will be organised in multiple folders, in order to preserve the overall ordering of materials.

The nomenclature of the folders and files is a string of fields (library code, shelf mark...) separated by a hyphen (-). Where the shelf mark contains a hyphen (-), spaces or special characters, they are replaced by a dot (.)

To facilitate quality control, it is recommended not to include more than 200 pictures in folders for TIF files, or more than 100 images if they are large format documents. In these cases, subdivide the folder into more, consecutively-numbered folders.

For graphic material and archive material that are scanned on both sides, follow the progressive numbering of “-r” files for the recto, and “-v” files for the verso.

For books, front and back covers are named so that they occur in the same order they have in the physical document. The spine or other parts of the original document (textblocks, binding details ...) must be included at the end.

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4 The PDF may be one of three types: a “normal” or digitally created PDF, for example by exporting the text from Microsoft Word; an “image-only” or scanned PDF; or a searchable PDF created by performing OCR on the images it contains (see: [https://www.abbyy.com/it-it/finereader/types-of-pdfs/](https://www.abbyy.com/it-it/finereader/types-of-pdfs/)).
The image that includes the colour scale, the greyscale and the metric scale, must be named so that it is the last file in the folder and a “-c” is added to the progressive numbering of the file.

**Books**

The main folder, named “Library Code – Shelf Mark”, will contain the following subfolders: TIF.Master (or RAW.Master depending on the native format produced by the capture tool), TIF.Derived, JPG300, JPG150 and, if required, OCR, even the PDF e XML subfolders, as well as a folder for each type of text file that may be present (TXT, EPUB...).

The file name will follow the following schema:
“Library Code – Shelf mark – Progressive Number.extension”

In the following case the folder containing the master file has been subdivided into consecutively numbered folders:

PUV21-ANT.BI10\TIF.Master-1\PUV21-ANT.BI10-0001.tif
PUV21-ANT.BI10\TIF.Master-2\PUV21-ANT.BI10-0101.tif
PUV21-ANT.BI10\TIF.Master-3\PUV21-ANT.BI10-0201.tif

**Journals**

The main folder, named “Library Code - Shelf mark”, will contain a subfolder for each year of the journal.

Within individual years, there will be different folders for different types of files, named TIF.Master (or RAW.Master depending on the native format produced by the capture tool), JPG300, JPG150 and, if OCR is required, even the PDF and XML subfolders as well as a folder for each type of text file that may be present (TXT, EPUB...).

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5. If the master is a RAW file, a TIF.High.Quality folder will also be created to contain the exact copies of the RAW files for which colour correction has been applied.

6. See previous note.
The files will be named as follows:

Photos, posters, maps (not bound in an atlas), parchments and other materials in loose sheets

The main folder will be called “Library Code – Significant Name”. The significant name will be created case by case at the time of digitisation. This folder will contain the following subfolders: 
*TIF.Master* (or *RAW.Master* depending on the native format produced by the capture tool), *TIF.Derived, JPG300, JPG150* and OCR if requested, and *PDF e XML* subfolders, as well as a folder for each type of text file that may be present (*TXT, EPUB...*)

The file name will follow the following schema:
“Library Code – Significant Name – Progressive Number.extension”

If the master files master are RAW, a *TIF.HighQuality* folder will also be created to contain exact copies of the RAW files for which colour corrections have been applied.
Archive material

The main folder, named “Library Code – Collection Code – Series or Subseries Number – File or Subfile Number”, will contain the following subfolders: TIF.Master, TIF.Derived, JPG300, JPG150 and OCR if requested, also PDF and XML subfolders, as well as a folder for each type of text file eventually present (TXT, EPUB...).

The file name will follow the following schema: “Library Code – Collection Code – Series or Subseries Number – File or Subfile Number – Progressive Number.extension”

4.5 Data storage and conservation

It is essential to maintain digital assets created over time in order to avoid repeating the costly work of scanning, so procedures must be put in place to ensure that digital objects remain usable and accessible regardless of future changes in technology. The usability and accessibility of digital objects over time is guaranteed by file format (format standard, file size, network transmission time, how the images are displayed...), by media storage and by the digital repository. It is essential to use open standards to facilitate interoperability with other systems and thus access to metadata through other service providers (e.g. Europeana).

8 If the master files are RAW, a TIF.High.Quality folder will also be created to contain exact copies of the RAW files for which colour corrections have been applied.

The Library System has defined a project archiving procedure\(^\text{10}\) which requires the project manager to deliver the digitization product to CAB (The University Library Centre) for secure storage at the ASIT data center (the Computer and Telematic Services Area of the University of Padova).

For ease of access, the digital collections are also saved on optical or magnetic storage media (DVDs, Blu-ray Discs, removable disks), in two copies, one to be kept in the library and the other at CAB.

### 4.6 Quality control

Quality control is aimed at ensuring good screen readability of the entire information content present in the original, this should be documented and maintained during the entire digitisation process. Besides the on-screen control, it can be useful to do print tests to verify the quality of the image on paper.

Quality control planning includes:

- proper preparation of the environment (hardware configuration, visualisation software, viewing conditions, etc.)
- a priori definition of “acceptable” and “unacceptable” characteristics
- verification mode (any product or a sample, all files or only the master, visual screen quality and printing quality, etc.).

The visual inspection of an image usually involves:

- correctness of framing and exposure, the absence of any deformation and/or optical aberrations
- control of the chromatic tolerance
- depth and colour profile
- digital size and format
- the presence of any elements which compromise the fidelity of the reproduction (light reflections, etc.);
- file name

\(^{10}\) [https://bibliotecadigitale.cab.unipd.it/collezioni_navigazione/Members/bibliotecari/materiali_settore_bd/gl-biblioteca-digitale/gruppo-phaidra/factory/digitalizzazione/READMEArchiviazioneprogettidigitalizzazioneSBA3.txt](https://bibliotecadigitale.cab.unipd.it/collezioni_navigazione/Members/bibliotecari/materiali_settore_bd/gl-biblioteca-digitale/gruppo-phaidra/factory/digitalizzazione/READMEArchiviazioneprogettidigitalizzazioneSBA3.txt) (Accesso riservato allo staff del Sistema Bibliotecario di Ateneo)
Archiving in Phaidra consists of uploading digitised files and entering the necessary data for the identification and description of the digital item.

It is possible that the object being archived is catalogued in other systems, such as an online catalogue or other platforms, so it is recommended to contact the Phaidra Project Team\textsuperscript{11} to determine the procedure for the possible migration of data.

For how to archive and compile metadata, see “Guida all’archiviazione” (Archiving Guide)\textsuperscript{12}.

\textsuperscript{11} https://bibliotecadigitale.cab.unipd.it/aiuto
\textsuperscript{12} https://phaidra.cab.unipd.it/static/guida-all-archiviazione.pdf
6. Further details

Selection of resources divided by topic.

6.1 Planning

ATHENAWP3 (edited by), *Digitisation Standard Landscape for European museums, archives, libraries*, 2009
https://phaidra.cab.unipd.it/o:6785

http://chnm.gmu.edu/digitalhistory/index.php

Europeana Pro
https://pro.europeana.eu/

International Federation of Library Associations and Institutions (IFLA), *Guidelines for digitisation projects*, 2013

Istituto centrale per il catalogo unico delle biblioteche italiane e per le informazioni bibliografiche (ICCU), *Normative catalografiche, linee guida e standard*
https://www.iccu.sbn.it/it/normative-standard/

Lunati, Gabriele – Bergamin, Giovanni (edited by), *Manuale virtuale per la progettazione digitale*, 2012
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Ministerial network for valorising activities in digitization (MINERVA), *Manuale di buone pratiche per la digitalizzazione del patrimonio culturale*, 2004
http://www.minervaeurope.org/publications/buonepratiche.htm

Ministerial network for valorising activities in digitization (MINERVA), *Linee guida tecniche per i programmi di creazione di contenuti culturali digitali*, 2006
http://www.minervaeurope.org/publications/technicalguidelines_it.htm


https://chnm.gmu.edu/digitalhistory/links/pdf/chapter1/1.17.pdf
6.2 Preservation

International Federation of Library Associations and Institutions (IFLA) Core Programme, Preservation and Conservation, *Principi dell'IFLA per la cura e il trattamento dei materiali di biblioteca*, 2004
https://www.ifla.org/files/assets/pac/pip/ipi1-it.pdf

The Library of Congress, *Preservation, Collections Care*
http://www.loc.gov/preservation/care/

6.3 Digitisation

Association for Library Collections & Technical Services (ALCTS), *Minimum Digitization Capture Recommendations*, 2013
http://www.ala.org/alcts/resources/preserv/minimum-digitization-capture-recommendations

Besser, Howard (revised by S. Hubbard, D. Lenert), *Introduction to Imaging*

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https://www.iccu.sbn.it/it/normative-standard/linee-guida-per-la-digitalizzazione-e-metadati

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The Library of Congress, *Standards at the Library of Congress*  
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Universität Wien, Università di Padova, *University of Vienna Metadata Uwmetadata*, 2019
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7 Contact

For more information about digitisation, contact Lorisa Andreoli lorisa.andreoli@unipd.it, Linda Cappellato linda.cappellato@unipd.it or Gianluca Drago gianluca.drago@unipd.it

For information about Phaidra, contact Ask the Library Helpline provided by the University of Padova Library System.
Attachment 1. Specifications for XML files of texts to be subjected to OCR

The XML file must have the same name as the image file to which it refers (e.g. the image page1.jpg must correspond to an XML file named page1.xml).

From an image like the one above (https://phaidra.cab.unipd.it/detail_object/o:83943) an XML file formatted like this should be obtained:
Del dialetto fin da quell'ora.
Attachment 2. Digitisation project information sheet

This sheet indicates the set of prerequisites that should be highlighted in digitisation projects aimed at depositing documents and collections in Phaidra.

“Facsimile Sheet”

<table>
<thead>
<tr>
<th>Project Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure (Department, Centre, Library, etc.)</td>
</tr>
<tr>
<td>Scientific manager</td>
</tr>
<tr>
<td>name</td>
</tr>
<tr>
<td>phone</td>
</tr>
<tr>
<td>fax</td>
</tr>
<tr>
<td>e-mail</td>
</tr>
<tr>
<td>Project Manager</td>
</tr>
<tr>
<td>name</td>
</tr>
<tr>
<td>phone</td>
</tr>
<tr>
<td>fax</td>
</tr>
<tr>
<td>e-mail</td>
</tr>
<tr>
<td>Technical coordinator</td>
</tr>
<tr>
<td>name</td>
</tr>
<tr>
<td>phone</td>
</tr>
<tr>
<td>fax</td>
</tr>
<tr>
<td>e-mail</td>
</tr>
<tr>
<td>Project title</td>
</tr>
<tr>
<td>Short description of the collection</td>
</tr>
</tbody>
</table>

The scientific manager (an expert or scientific committee) is the person who assumes responsibility for the selection of the materials and defines the quality of the metadata. In the selection phase, he/she is supported by the project manager, particularly for the examination of the materials and for legal aspects.

The project manager cooperates with the scientific manager, supports the scientific manager in the analysis of the legal issues, coordinates the activities related to the digitisation and guarantees the quality of the metadata.

As coordinator for technical-operational activities, he/she collaborates with the Phaidra Team, which in turn provides technical assistance.
<table>
<thead>
<tr>
<th>Brief description of the project phases and members involved</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration of the project</td>
<td></td>
</tr>
</tbody>
</table>

### Information on the original documents
*books, collections of journals, atlases, maps, photographs, etc.*

<table>
<thead>
<tr>
<th>Dating</th>
<th>da_________________a__________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type:</td>
<td>Estimated Quantity:</td>
</tr>
<tr>
<td>☐ printed text</td>
<td></td>
</tr>
<tr>
<td>☒ handwritten text</td>
<td></td>
</tr>
<tr>
<td>☐ printed and handwritten music</td>
<td></td>
</tr>
<tr>
<td>☐ map</td>
<td></td>
</tr>
<tr>
<td>☐ poster</td>
<td></td>
</tr>
<tr>
<td>☐ postcard</td>
<td></td>
</tr>
<tr>
<td>☐ drawing</td>
<td></td>
</tr>
<tr>
<td>☐ painting</td>
<td></td>
</tr>
<tr>
<td>☐ print (engraving, etching, etc.)</td>
<td></td>
</tr>
<tr>
<td>☐ parchment</td>
<td></td>
</tr>
<tr>
<td>☐ negative b/w</td>
<td></td>
</tr>
<tr>
<td>☐ negative col.</td>
<td></td>
</tr>
<tr>
<td>☐ photograph b/w</td>
<td></td>
</tr>
<tr>
<td>☐ photograph col.</td>
<td></td>
</tr>
<tr>
<td>☐ slide b/w</td>
<td></td>
</tr>
<tr>
<td>☐ slide col.</td>
<td></td>
</tr>
<tr>
<td>☐ other (specify)___________________________</td>
<td></td>
</tr>
<tr>
<td>Presentation of documents</td>
<td>☐ loose sheets</td>
</tr>
<tr>
<td>☐ rolled sheets</td>
<td></td>
</tr>
<tr>
<td>☐ bound</td>
<td></td>
</tr>
<tr>
<td>☐ album</td>
<td></td>
</tr>
<tr>
<td>☐ mounting on cardboard or other material</td>
<td></td>
</tr>
<tr>
<td>☐ mounting in a frame</td>
<td></td>
</tr>
<tr>
<td>☐ envelopes</td>
<td></td>
</tr>
<tr>
<td>☐ folders</td>
<td></td>
</tr>
<tr>
<td>☐ boxes</td>
<td></td>
</tr>
<tr>
<td>☐ other (specify)___________________________</td>
<td></td>
</tr>
<tr>
<td>Document Dimensions</td>
<td>☐ &lt; di A4 ______________________________</td>
</tr>
<tr>
<td>☐ A4 ______________________________</td>
<td></td>
</tr>
<tr>
<td>☐ A4 ______________________________</td>
<td></td>
</tr>
<tr>
<td>Information on digital objects</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>Estimated number of digital objects</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Intended use of digital objects</strong></td>
<td></td>
</tr>
<tr>
<td>☐ open web access *</td>
<td></td>
</tr>
<tr>
<td>☐ restricted web access *</td>
<td></td>
</tr>
<tr>
<td>☐ access to the local network</td>
<td></td>
</tr>
<tr>
<td>☐ CD-ROM or DVD</td>
<td></td>
</tr>
<tr>
<td>☐ printed</td>
<td></td>
</tr>
<tr>
<td>☐ other (specify) ____________________________</td>
<td></td>
</tr>
</tbody>
</table>

* Please note that digital objects located in Phaidra may be open access (any user can look at the preview, metadata and files) or restricted access (view metadata and a preview).

<table>
<thead>
<tr>
<th>Preliminary checks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Document sources</strong></td>
</tr>
<tr>
<td>☐ acquisition</td>
</tr>
<tr>
<td>☐ donation</td>
</tr>
<tr>
<td>☐ I do not know</td>
</tr>
<tr>
<td>☐ other (specify) ____________________________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Has a selection of documents been made?</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ yes ☐ partially ☐ no</td>
</tr>
</tbody>
</table>

If so, what are the selection criteria?

<p>| ☐ historical and cultural value |
| ☐ uniqueness and rarity |
| ☐ high demand |
| ☐ material without legal constraints or with digitisation permits obtained |</p>
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access restricted due to the state of conservation, the value, or the location</td>
<td>☐ yes ☐ no</td>
</tr>
<tr>
<td>Added value through online access, the creation of virtual collections, increased research interest for little known or unknown material, etc.</td>
<td>☐ other (specify)</td>
</tr>
<tr>
<td>Was a review made?</td>
<td>☐ yes ☐ partially ☐ no</td>
</tr>
<tr>
<td>Is there a digitised version?</td>
<td>☐ yes ☐ no</td>
</tr>
<tr>
<td>If not, which organisations, websites, catalogues, etc. have been checked?</td>
<td></td>
</tr>
<tr>
<td>Are there legal restrictions (copyright, privacy protection, the donor's rights, etc.)?</td>
<td>☐ yes ☐ partially ☐ no</td>
</tr>
<tr>
<td>Any additional information:</td>
<td></td>
</tr>
<tr>
<td>Are the documents described/catalogued?</td>
<td>☐ yes, all ☐ yes, partially ☐ no ☐ I do not know</td>
</tr>
<tr>
<td>If yes, how?</td>
<td></td>
</tr>
<tr>
<td>☐ printed list</td>
<td></td>
</tr>
<tr>
<td>☐ electronic list</td>
<td></td>
</tr>
<tr>
<td>☐ printed catalogue</td>
<td></td>
</tr>
<tr>
<td>☐ electronic catalogue</td>
<td></td>
</tr>
<tr>
<td>☐ printed archive inventory</td>
<td></td>
</tr>
<tr>
<td>☐ electronic archive inventory</td>
<td></td>
</tr>
<tr>
<td>☐ other (specify)</td>
<td></td>
</tr>
<tr>
<td>In the case of printed text, is it intended to implement OCR (Optical Character Recognition)?</td>
<td>☐ yes ☐ partially ☐ no</td>
</tr>
<tr>
<td>In the case of handwritten text, is it intended to transcribe the documents?</td>
<td>☐ yes, all ☐ yes, partially ☐ no ☐ I do not know</td>
</tr>
<tr>
<td>Estimated project costs</td>
<td></td>
</tr>
<tr>
<td>If digitisation is in-house, indicate:</td>
<td></td>
</tr>
<tr>
<td>- cost of equipment specifying the type of instrumentation</td>
<td></td>
</tr>
<tr>
<td>- operator costs</td>
<td></td>
</tr>
<tr>
<td>If digitisation is outsourced, indicate:</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------</td>
<td></td>
</tr>
<tr>
<td>- unit cost __________________________</td>
<td></td>
</tr>
<tr>
<td>- total cost __________________________</td>
<td></td>
</tr>
</tbody>
</table>

Notes

Sheet compiled by

Date compiled

The undersigned are aware that they must operate in accordance with local regulations on copyright. They declare that the documents of this project are (tick one of the options):

- owned by the University of Padova and protected by current legislation on copyright and industrial property
- owned by third parties who have, however, granted the University of Padova, the right to use them
- in the public domain

Signature of Scientific Manager _________________________________

Signature of Project Manager _________________________________
Digitisation workflow
and the professionals involved

Lorisa Andreoli, Gianluca Drago
University of Padova — University Library System

Padua, 2014
1. Planning and preparation

Material Selection

The scientific manager and the project manager choose the documents on the basis of the selection criteria defined by the project, paying particular attention to legal issues (copyright, privacy laws ...). From this point of view, any problem must be submitted to the opinion of legal counsel.

Survey

Overview of quantity, size, type, conservation state of the documents, asset value and any other useful information. The Scheda di progetto [1], Project Information Sheet, may be used as a reference.

Preservation

Evaluation of the condition of the originals and preparation of a conservation plan (see Raccomandazioni su come maneggiare i materiali per la digitalizzazione [2], Recommendations on how to handle the materials for digitisation). The restoration of the documents must be authorised by the Superintendent for Library Heritage and communicated to the Rector (see Richiesta di autorizzazione per restauro [3], Authorization request for restoration, Comunicazione restauro al Rettore [4], Restoration communication to the Rector). The return of documents must be reported to the Rector and the Superintendent (see Comunicazione rientro documenti da restauro/digitalizzazione al Rettore [5], Communication on return of documents following restoration/digitisation to the Rector, Comunicazione rientro documenti da restauro/digitalizzazione alla Sovrintendenza [6], Communication on return of documents following restoration/digitisation to the Superintendent).

Cataloguing

Check for the presence of the cataloguing records in Aleph (or in other local databases in view of a possible import). Definition of standards and level of cataloguing and of metadata required depending on the type of document. Cataloguing of documents not found in Aleph.

Digitisation

Definition of the digitisation parameters (equipment, resolution, size, colour depth, file formats, file naming) (see Linee Guida sulla digitalizzazione [7], Guidelines on Digitisation). Evaluation of advantages and disadvantages of outsourced (2a) or in-house (2b) digitisation.
2a. Outsourced digitisation

This can be performed in the premises of the library or at those of the selected company. Preparation of the market research or definition of the tender (see Documenti su indagini di mercato e gare di appalti [8], Documents on market investigations and tenders) and the flow of activities.

If the digitisation is undertaken at a company’s premises, the transfer of the documents must be authorised by the Rector and the Superintendent of Library Heritage (see Comunicazione spostamento temporaneo al Rettore [9], Communication to the Rector on temporary displacement, and Comunicazione spostamento temporaneo alla Sovrintendenza [10], Communication to the Superintendent on temporary displacement). The return of documents must be reported to the Rector and the Superintendent (see Comunicazione rientro documenti da restauro/digitalizzazione al Rettore [5] and Comunicazione rientro documenti da restauro/digitalizzazione alla Sovrintendenza [6], Communication to the Superintendent on return of documents following restoration/digitisation).

- review of the technical and logistical aspects
- possible preparation of the digitisation set
- preparation of the documents
- training of staff and the operators involved in quality control
- creation of a prototype

REPEAT
for No. of batches

- digitisation batch
- quality control
- correction of defects and errors

- relocation of documents
- delivery of the finished product
- final quality control
2b. In-house digitisation

Defining the flow of activities. The flow includes:

- purchase of equipment
- training of staff and the operators involved
- review of the technical and logistical aspects
- preparation of digitisation set
- document preparation
- creation of a prototype

**REPEAT**

- digitisation batch
- quality control
- correction of defects and errors

- relocation of documents

---

3. Archiving in Phaidra

Import records from the Catalogue or import from other databases or direct archiving in Phaidra (see *Printable guides in Phaidra [11]*).

Storage of files produced.
Most links require authentication at: http://bibliotecadigitale.cab.unipd.it/

[1] Scheda di progetto http://tinyurl.com/ljwux7d
[3] Richiesta di autorizzazione per restauro http://www.regione.veneto.it/web/cultura/modulistica2