

2023



Virtual Microscopy Histology and Histopathology

STANDARDS CHART

AND PROCEDURES FOR MEDICAL UNIVERSITIES
IN ADAPTATION OF THEIR CURRICULA
TO VIRTUAL MICROSCOPY



Co-funded by
the European Union

**DIGITAL TRANSFORMATION OF HISTOLOGY AND
HISTOPATHOLOGY BY VIRTUAL MICROSCOPY (VM) FOR
AN INNOVATIVE MEDICAL SCHOOL CURRICULUM**

ERASMUS+ PROJECT, REF.NO. 2022-1-RO01-KA220-HED-000089017



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1. Introduction

The present material is developed within the project VM3.0 - Digital transformation of Histology and Histopathology by Virtual Microscopy (VM) for an innovative medical school curriculum, Ref.no. 2022-1-RO01-KA220-HED-000089017, funded under the programme Erasmus+, action type KA220 HED Cooperation partnerships in higher education.

The idea of the project is that implementation of digital/virtual microscopy (VM)/ whole slide imaging (WSI) opens new possibilities for training and increases the quality of undergraduate and postgraduate students' knowledge in histology and histopathology during COVID 19 pandemic and post pandemic period.

This document serves as a clear guide on the importance of adhering to the standards and how they contribute to the effectiveness of the scanning process, for medical universities in adaptation of their curricula to VM.

Creation of a **VM Standards Chart** containing the potential applications of VM in histology & histopathology is important for the project in order to be adapted to each university requirements & standards. Establishment of technology requirements is very important to be set from the beginning because it would establish the necessary technologies to achieve high quality virtual slides and to have the possibility to a successful teaching session with students, without interruption, long latency, unclear visualisation, even when the slides have a large size. The use of common equipment would allow easy sharing of WSI and, finally, the implementation of the system in all partners' universities.

The Standards Chart outlines essential guidelines for slide preparation, coverslip usage, labeling, slide dimensions, and a slides transfer protocol.

The Standards Chart ensures the quality and simplicity of histopathology scans.

The Standards Chart caters to individuals involved in slide preparation, emphasizing cleanliness, coverslip condition, proper labeling, and adherence to specific slide dimensions.

The Standards Chart targets both specialists and external evaluators, offering a comprehensive understanding of slide preparation best practices, which is crucial for maintaining scan quality.





2. Slide Preparation Standards

The slide's preparation is crucial to the scan's quality and simplicity.

- Make sure the **slides are clean** and in good shape by checking for debris, fingerprints, writing, additional glue, broken slides, chips, and scratches.
- Ensure that all **slides are properly cured** (i.e., not "wet").
- All slides that are scanned **ought to have coverslips** for optimum results.
- In order to prevent a slide from sticking or catching in the scanner stage region, make sure **there is no adhesive around the slide's borders**.
- **The tissue should preferably be placed in the center of the slide**, away from its edges, the label, and any other marks.

3. Coverslips

The state of the coverslip has an impact on the scan's quality.

- Use as little adhesive as possible to affix the coverslip on the slide. Slide focus would not be precise if a focus point hits on the adhesive.
- **Check that the coverslip does not have any air pockets.**
- The coverslip should not have any marks or writing on it for optimal effects.
- The coverslip must not extend past the slide's edge.

4. Labeling

Slides in the AutoLoader may become stuck if slide labels are not put properly.

- Avoid applying several labels to the same slide since this may result in the slide exceeding the allowed slide thickness.
- Make sure that labels do not cover any tissue and do not extend over the slide's margins.
- Make sure the labels are affixed securely.
- Applying labels on the slide's bottom surface is not recommended.

5. Slide dimensions/specifications

Slides must be designed such that they can be safely loaded onto and removed from the stage by the AutoLoader and fit readily into an AutoLoader rack slot.





Please make sure that your slides comply to the following requirements:

- ***between 0.968 inches (24.6 mm) to 1.043 inches (26.5 mm) in slide width***
- ***slide length range: 2.898 to 3.016 inches (73.6 to 76.6 millimeters)***
- ***maximum thickness (1.48 mm) with coverslip and 0.058 inches label***
- ***scanning area 54.9 mm (measured from the right side of the slide) x 22.9 mm (measured from top to bottom margins)***

6. Slides Transfer Protocol

It is crucial to make sure that the histopathology slides are prepared for transportation in accordance with the instructions listed below:

- 1) Ensure that all slides are labeled and provide a detailed list of the diagnosis and tissue origin.**
- 2) Firmly insert the slides into the slide carrier.**
- 3) Tape the container's lid on to keep it in place.**
- 4) Place the sealed slide(s) inside a cushioned box or envelope.**
- 5) Before putting the container in the box or envelope, cover it with bubble wrap for extra protection.**
- 6) Tape the box or envelope shut.**
- 7) Use a strong container or crate to hold the envelopes if a sizable number of envelopes are being transported.**
- 8) Ensure that any paperwork the shipper requests is simple to find.**
- 9) If necessary, provide the customer tracking information as soon as you can.**
- 10) The carrier should be notified right away if there are any delays or damaged goods.**

All slide shipping must be accompanied by a TRANSFER AGREEMENT (TA) INFORMATION SHEET as provided herewith.





7. Transfer agreement information sheet

The name of the organization providing the slides
The name of the organization receiving the slides
The number of slides provided and the total number of slide carriers/ packages
Attached list of description of each slide: <input type="checkbox"/> Yes <input type="checkbox"/> No
The intended use of the materials
Teaching Histology and Histopathology by Implementation of digital/virtual microscopy (VM)/ whole slide imaging in the project: <i>Digital transformation of Histology and Histopathology by Virtual Microscopy (VM) for an innovative medical school curriculum</i> <i>Project Reference No. 2022-1-RO01-KA220-HED-000089017</i>

Date of shipping

.....

Person responsible for packing/shipping

.....

Received date

.....

Person who received the slides

.....



"Grigore T. Popa"
University of Medicine and
Pharmacy

Iasi, Romania



Gdanski Uniwersytet
Medyczny

Gdansk, Poland



Медицински университет

Пловдив, България



Universidad De Alicante

Alicante, Spain



University of the
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