Standards & Recommandations for Digital Pathology: image selection & annotation

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Need for Standardization 1

- CLM versus WSI examination: validation in progress for diagnostic utilization
- Image system:
  - Image acquisition: RIO, album
  - Measures
  - Annotations on the WSI:
    - Free = tag /commentary
    - Picked in a list / template
    - Localization x,y
- *Intelligent image = data*

Need for Standardization 2

- Where in the WSI?
- Localisation significant for the Pathologist
- Traced topography
- Territory qualification
- Which magnification low, high?
- Transposition from CLM observation and figures in text books & publications
- Exchange & compare

Need for Standardization 2

- Where in the WSI?
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- Which magnification low, high?
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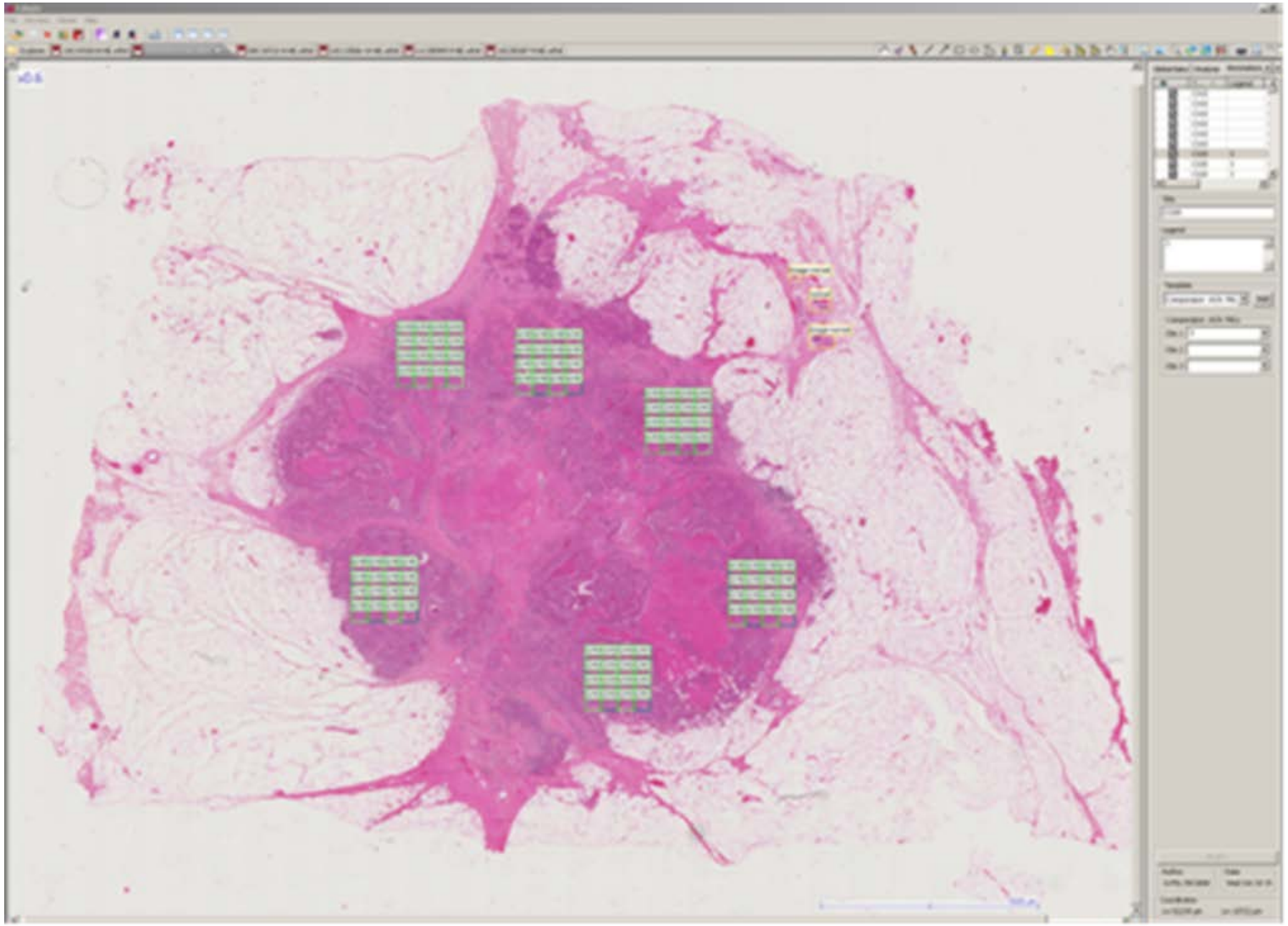
Need for Standardization 3

- Where:
  - Territory : hand selected areas on the PC screen
    - Normal « N », tumor « T »
  - Frames /« cadres » boxes / « boîtes »
    - Standardized shape & size
    - Different sizes.scope for different level of morphological annotation
  - Target

Need for Standardization 4

- Frames :
  - F10, F20, F40
  - F40 = surface of a x 40 CLM
  - F40 = square, *rectagle*
    - pixels: 1500 x 1500
    - 512 µm x 512 µm, 0,262 mm^2
  - WSI counting correlated to CLM reference
- Interobserver, multiobserver evaluation



1 *F10* = 4 *F20*, 16 *F40*

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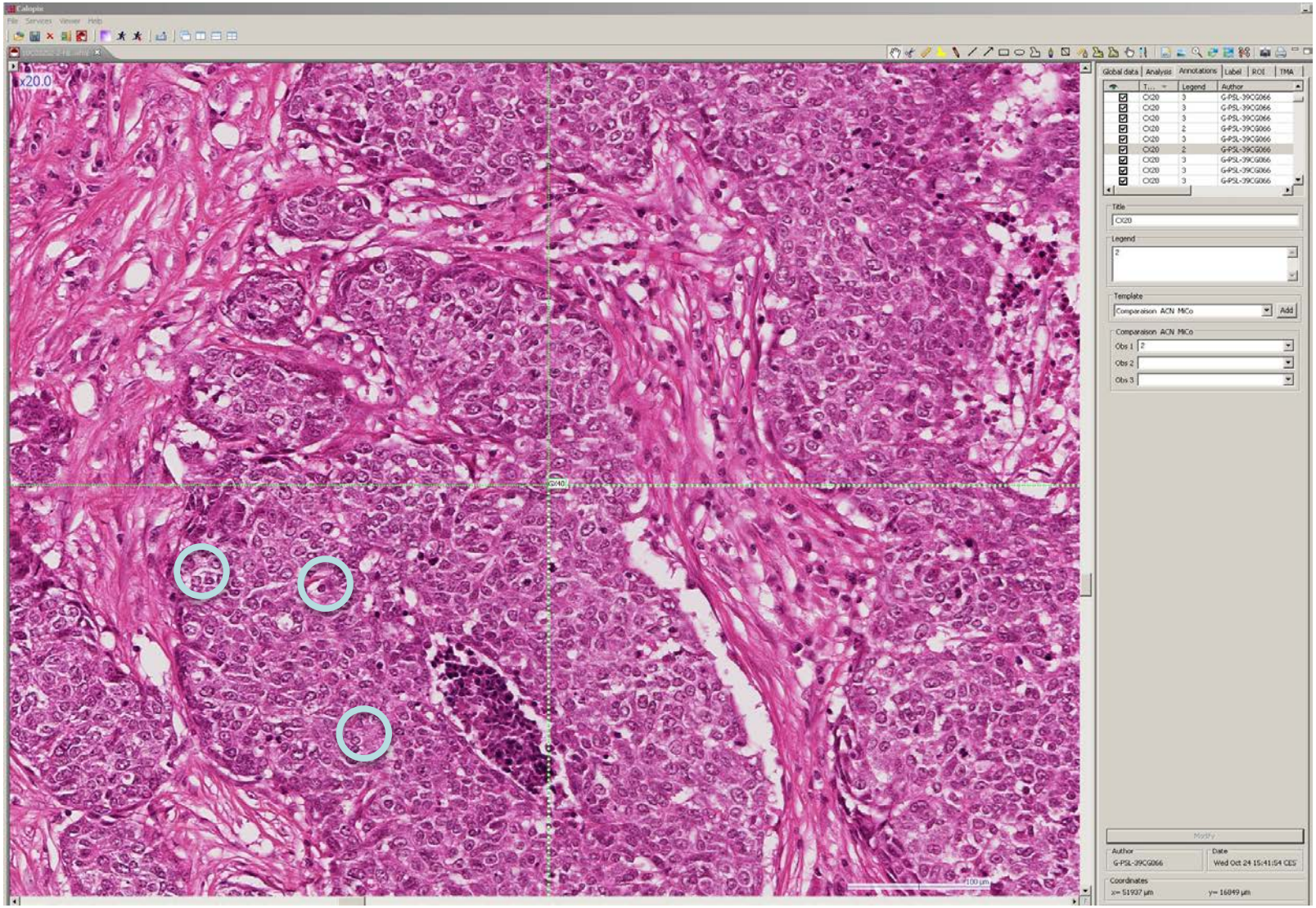

1 *F20* = 4 *F40*

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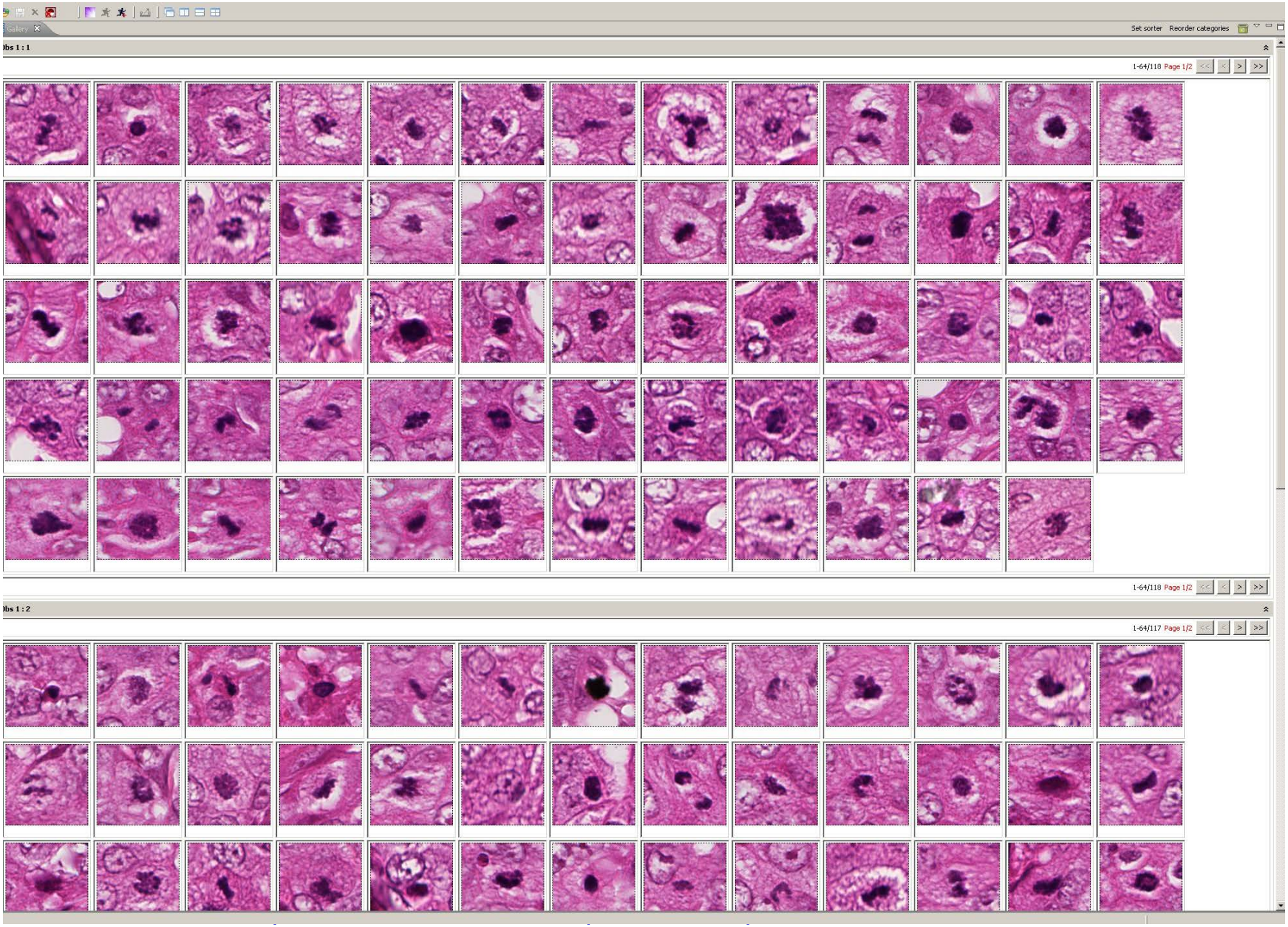
Gallery
Set sorter
Reorder categories
bs 1 : 1
1-64/118 Page 1/2
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bs 1 : 2
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Need for Standardization 6

- Ontology for WSI

		F 10 or F20 or 40	*type*	*Code*	*Graph*
lumina of the prostatic ducts	lumière des canaux prostatiques				
smooth muscle tissue	tissu musculaire lisse				
rounded structures	structures arrondies				
lobular units	unités lobulaires				
corpora amylacea	corps amylacé				
laminated hyaline eosinophilic structures	structures laminées éosinophiles hyalines				
calcified	calcifié				
skeletal muscle	muscle squelettique				

- Collective work?
- ADICAP

Graphs

- Branch
  - (103) check the conformity
  - (104) Gap
    - conformity of the request form
      - (105) check the presence of an identification label of the patient first and last name
      - (106) check that date and time of sampling are marqued
      - (107) check that time of fixation is indicated if the sample is fixed
      - (108) check that the nature of samples, pots or slides is indicated
      - (109) check if the clinical informations are written on the request form
      - (110) check the presence of indices or numbering when there are multiple samples
      - (111) check that indices marked on the samples correspond to those marked on the requestform
      - (112) check the identification of the doctor who made the sample or asked for it, stamp and or signature
    - conformity of the sample
      - (113) check that the patient's identification is affixed to the pot, same as on the request form
      - (114) check that indices are noted on the samples' pots if the package contains several specimens collected from the patient
      - (115) check that the speciman has an optimal conditioning for adequate processing
  - (116) is everything compliant to norms?
    - yes
      - (117) state of the sample
        - fresh
          - (118) open the bag
          - (119) move the sample in a pot
          - (120) stick the patient's identification label on the pot
        - fresh in a pot
          - (121) apply fresh tissue procedure
        - fixed in a pot
          - (122) check the fixing liquid's volume and the convenience of the pot's size
      - (123) order of packages' management when multiple?
        - one by one
        - all at the same time
    - no
      - (124) blocking nonconformity?
        - yes
          - (125) management of a blocking nonconformity
        - no
          - (126) report the nonconformity to the prescriber department
          - (127) register and fill keywords in the computer file
          - (128) choose the medical sector
            - C: standard
            - G: gynecological smears
            - D: communicated case for review
            - A: autopsy
            - E: experimentation