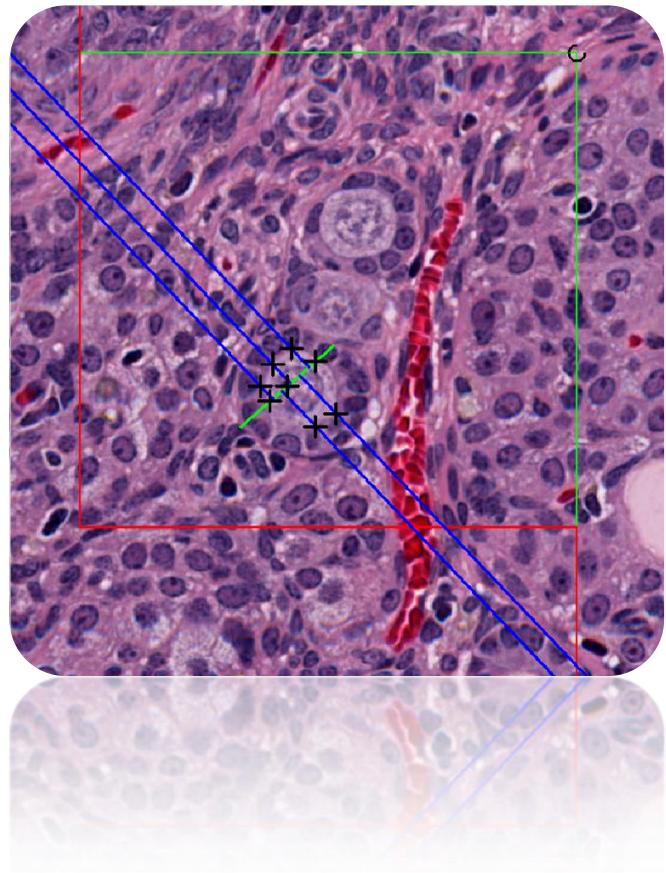


newCAST™ is a state-of-the-art stereology software implementing a wide range of probes and other tools for obtaining unbiased statistical estimates of number, length, area, and volume. Imaging, sampling, analysis and data management is integrated making performance of stereological studies easy.

newCAST™ can be upgraded with advanced stereological tools including intelligent Proportionator™ sampling and automation of sampling for the physical disector by the AutoDisector™.



Technical overview

Sampling

Definition of region of interest

- Navigator displaying region of interest and sampling progress
- Superlens navigator for acquisition of low magnification superimage of section and definition of region of interest.
- Define up to 255 types of region of interest (using mask tool)
- Save and load mask tool configurations

Sample types

- Cavalieri samples (arbitrary orientation, systematic uniform random sampling)
- Isotropic uniform random sections (IUR)
- Vertical sections (VUR) – define vertical axis in sample
- Samples from fractionators with subsampling and Fast fractionators

Sampling methods

- Systematic uniform random sampling (Meander sampling)
 - Area fraction based
 - X, Y – stepper based
 - Number of sample based (for pilot studies)
- Proportionator sampling (upgrade optional with Proportionator™ module)
- Store and load sampling configurations

Perform sampling live on the microscope or live in virtual slides by the WSManger™

Analyse series of images, image pairs or image stacks by off-line sampling generated by MicroImager™ or AutoDisector™

Probes

Stereological probes

- Points
- Lines
 - Surface density, length density, User defined
- 2-D and 3-D counting frames
- Local estimators
 - Rotator
 - 2-D and 3-D Nucleator
 - Point sampled intercepts

Combine several probes

- 3 layers of points
- 3 layers of lines
- 3 layers of counting frames

Create, store and load probe configurations

Optical disector and fractionator

- Define disector top and bottom
- Color indication of permitted regions
- Z-axis navigator indication
- Measure local section thickness

Physical disector and fractionator

- Definition of sections by free-hand drawing
- Visual alignment of section pair
- Live sampling of paired fields of view
- Extended field of view in look up section
- Conn Euler analysis

Non-stereological probes

- Mean Chord Length
 - Mean Linear Intercept
 - Perimeter
-

Counting

Define and use up to 30 different counting marks

Create, store and load count tool configurations

Automatic logging of count and sampling data during counting process

Keyboard counting for up to 10 different marks

Keyboard short-cuts for sampling actions

Review counting marks and analysis positions at low magnification after counting

Repeat sampling for review of counting results

Imaging and Data Management

Imaging

- Sampling and analysis in live view
 - Acquire images during sampling
- Analysis in series of individual images, paired images, or z-stacks
 - Acquired using MicroImager™ or AutoDisector™
 - Imported TIFF- or JPEG images acquired outside Visiopharm software
- Hardware control for automated microscope systems
 - Create imaging configurations controlling objectives, filters and camera settings
 - Store and load imaging configurations
- Sampling and analysis in live view in virtual microscopy systems with WSManger™

Data Management

- Automatic logging of count data and sampling parameters
 - Data Review
 - Individual measurement data
 - Summary of groups of measurement data
 - Visual inspection of counting marks
 - Optional extended data review including exact log information on individual counts (e.g. (x, y, z)-coordinates)
 - Export data to MS Excel
 - Electronic audit trail
-