

Surveyor with Turboscan

Fast Mosaic Image Acquisition



Objective Imaging's **Surveyor** automated scanning and imaging with **Turboscan** enables high quality image mosaic creation at camera frame rates.

Scan the entire slide in minutes, and then effortlessly relocate to areas of interest with a simple click. Quickly get the specimen overview to aid in understanding the relationships between microscopic features and overall structure. Save your work for later review, discussion, and publication.

Based on the **OASIS-4i controller** with either the **OASIS-DC1** digital camera interface or **OASIS-AF** analog video processor option, Surveyor with Turboscan provides the ideal solution surveying, relocating, printing and saving mosaic images at a new standard in high-performance automation.



Example Scan

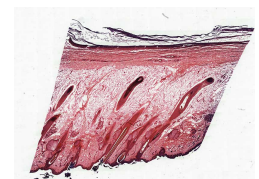
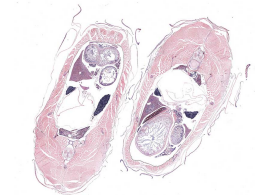
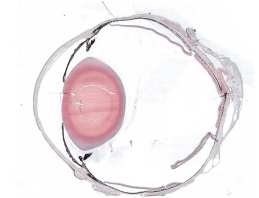
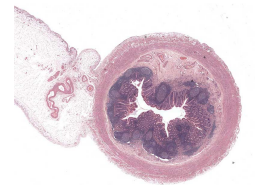
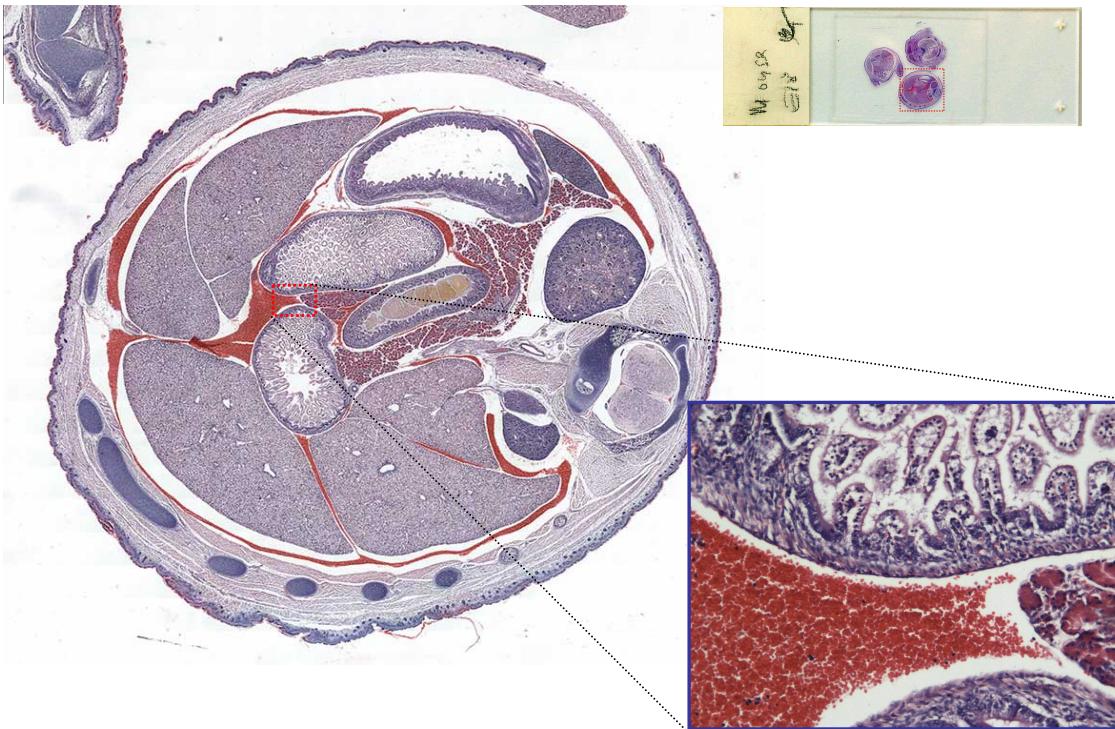
Mouse, 10X objective lens, Turboscan mosaic of over 340 images

Digital camera resolution: 1392 x 1040 pixels,

Final mosaic resolution: 23,596 x 20,720 pixels

Scanned with predictive focus and shading correction

Total time for scan and mosaic: 42 seconds



Surveyor with Turboscan Highlights:

- ◆ Scanning and acquisition at camera frame rates
- ◆ Support for various analog and digital cameras, including QImaging QICAM and Leica Microsystems DFC300FX
- ◆ High-quality image tiling
- ◆ Frame-rate shading correction
- ◆ Fast and accurate relocation
- ◆ Continuous focus tracking using predictive focus
- ◆ Compatible with most 3rd party motorized stage and focus drives
- ◆ Intelligent memory management supports mosaic sizes limited only by available disk space
- ◆ Available as stand-alone application and as a capture driver for use within Image-Pro®

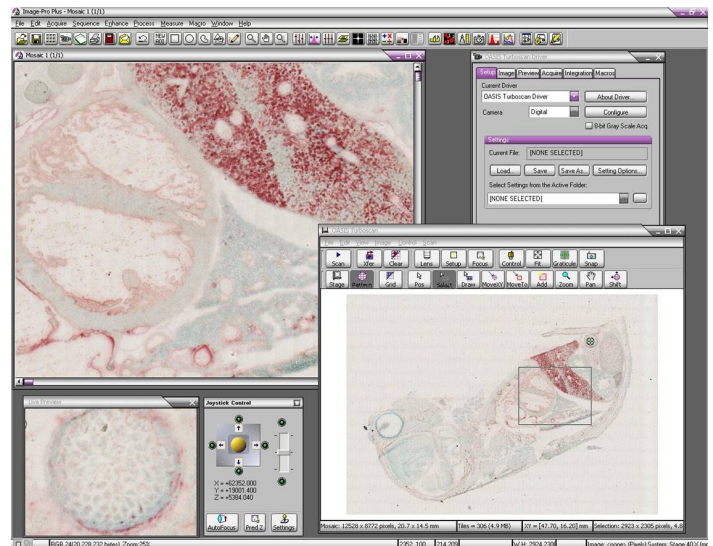
Surveyor with Turboscan

Surveyor Capture Driver for Image-Pro®

The Surveyor capture driver for Image-Pro includes the scanning and mosaic imaging features of the stand-alone Surveyor application, integrated within the Image-Pro environment.

Highlights include:

- ◆ Dedicated Surveyor mosaic imaging window
- ◆ Mosaic transfer to Image-Pro as image or tile sequence
- ◆ Auto-Pro macro support for setup and execution of mosaic image capture and transfer
- ◆ Joystick window for XYZ stage and focus control
- ◆ Image-Pro standard video/digital capture support



Surveyor Features at a Glance

Mosaic Acquisition

- ◆ Turboscan for fast continuous scan and acquire
- ◆ Standard scan using step and acquire for low light applications
- ◆ Snake and raster scanning
- ◆ User-defined settle time at each field
- ◆ Pause and continue scanning mode
- ◆ Grab individual fields into mosaic with key-press
- ◆ Acquire at full or reduced resolution
- ◆ JPEG compression option
- ◆ Image streaming for mosaic sizes limited only by free disk space

Scan Patterns

- ◆ Rectangle, Circular, Annular, Cross ("+", "x"), Random
- ◆ User-defined
- ◆ Save / load scan patterns
- ◆ Keyboard support for pattern scanning and stage navigation
- ◆ Optional automatic multi-site scanning module

Camera Support

- ◆ Image setup based on camera capabilities
- ◆ Exposure, gain, offset, and gamma control as available
- ◆ Automatic and manual white balance
- ◆ Color or monochrome acquisition
- ◆ Frame-rate shading correction
- ◆ Shading correction on live display
- ◆ Calibrated graticule overlay on live image
- ◆ Grab, copy, save live image

Export / Import

- ◆ Workspace save and load of full mosaic, scan pattern, and Surveyor environment
- ◆ Export mosaic as full resolution bitmap
- ◆ Export mosaic as reduced resolution bitmaps
- ◆ Export user-selected region of interest
- ◆ Print full mosaic or selected region
- ◆ Print preview

Specimen Map

- ◆ Stage and pattern views
- ◆ Point and click relocation to position or pattern field
- ◆ Real-time graphic display of current stage position on specimen map
- ◆ Zoom and pan
- ◆ Drag-drop pattern definition
- ◆ Acquire and display multiple mosaics at different magnifications

Calibration

- ◆ X and Y calibration factors
- ◆ Stored calibration table for multiple lens and secondary optic settings
- ◆ Guided camera to stage alignment procedure
- ◆ Automatic correlation-based calibration procedure
- ◆ Automatic stage orthogonality correction

Microscope Automation

- ◆ OASIS-4i XY stage and Z focus
- ◆ Software joystick for stage, focus, turret, and lamp control
- ◆ Leica Microsystems DM range focus, turret, condenser, and lamp control via RS-232
- ◆ Olympus BX-61 focus, turret, condenser, and lamp control via RS-232
- ◆ Stage and focus speed defined per objective
- ◆ Computer controlled parfocality and illumination (if fitted) defined per objective

Automatic Focus

- ◆ Multi-point predictive focus for continuous focus tracking
- ◆ Predictive focus setup wizard
- ◆ Video autofocus using OASIS-AF module
- ◆ Digital camera autofocus using OASIS-DC1 module
- ◆ Autofocus parameters stored separately for each objective lens



Innovative Solutions for Automated Microscopy

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