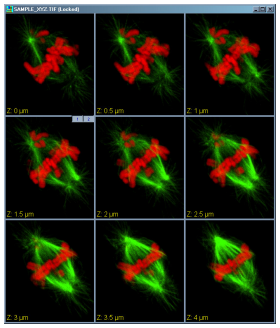
From INDEC BioSystems
FLUOVIEW Add-On Experts

OLYMPUS FLUOVIEW™ Software and Systems Upgrades

Give your FLUOVIEW system a lift to the latest software versions (v. 5), along with a new computer running Windows XP/2000 with modern display technologies.

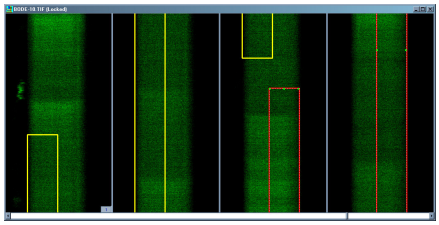


Computer Upgrade

- New Pentium IV 3+ GHz, 2 GB RAM, fast display graphics for 1- or 2-monitor display (second monitor optional), DVD burner, and Windows XP operating system

General improvements

- New image display structure provides
  - Easier, more flexible comparison of images
  - Linked movements of related windows
  - Flexible use of screen space, intuitive tiling
- Tiled line-scan displays for easier display and analysis of long line-scans
- Up to 70 simultaneously open experiments
- Convenient operation on 1- or 2-monitor systems
- Gallery window to easily find display windows
- Enhanced Navigation Bar for better image windows
- Sun/Moon screen bright/contrast controls
- Better file I/O GUI is redesigned for easier operation, recently loaded files listed
- Preferences simplify adjustments to settings made in FLUOVIEW Setup



Acquisition improvements

- Display-data-while-scanning allows window movements and overlap, multiple live acquisition windows
- Acquisition windows remember acquisition mode and restore FLUOVIEW to that mode when selected
- Tiled-display during acquisitions is available in all scan modes
- 3D display during acquisition provides live XT (XZ) and YT (YZ) scans (O3D)
- Extended-focus display during acquisition (O3D)
- Spectral detectors can be used as programmable emission filters (FV-1000)
- Photon counting function (FV-1000)
- 5 different scan speeds, instead of 3 (FV-1000)

Analysis improvements

- Volume measurements from intensity-thresholds and from overlays (O3D)
- 3D distance measurements (O3D)
- 'Local overlays' permit series-analyses over regions with different sizes and locations on each slice (O3D)
- 'Child overlays' provide annotations for overlay objects and dynamically report measurements from those overlays (O3D)
- User-definable 'active overlays' simplify frequently-used analyses
- Multiple analysis windows can be displayed simultaneously
- Multiple, simultaneous view processors for sophisticated image comparisons
- Oblique view of 3D and 4D data (O3D)
- 'Paper doll' printing of oblique view provides tangible display of data (O3D)
- New operators permit image rotations

Contact Information

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TIEMPO Add-On to OLYMPUS FLUOVIEW™

The FLUOVIEW TIEMPO option allows more sophisticated acquisition and analysis of temporal image sequences. TIEMPO acquisition supports input and output triggers to synchronize with external equipment, and TIEMPO analysis is available both during acquisition and analysis phases.

Trigger signals synchronize with external equipment

- Trigger outputs — these mark the start of each scanned frame, and the start and end of each scan line. TIEMPO event markers broadcast two digital output signals for user-defined functions.
- Trigger inputs — TIEMPO can start scans from external digital inputs or from the keyboard. XYT scans can be triggered frame-by-frame, or an entire sequence can be started from a single trigger.

Quantitative analysis of fluorescence data

- TIEMPO extends the inherent FLUOVIEW analysis tools. For example, the FLUOVIEW measurement of average intensity over ROIs is enhanced by TIEMPO to display $[Ca^{2+}]$ in units of nM.
- TIEMPO has an extensive probe database allowing specific calculations for any fluorescence experiment

Real-time analysis and display

- Live Processing — with TIEMPO, FLUOVIEW can display real-time analysis images concurrently with acquired images. For example, acquired images and analysis results can each have separate color lookup tables.
- LivePlots graph intensities from ROIs during acquisition. LivePlots display raw intensities or the output of TIEMPO ViewProcessors.
- Event Markers — add user-defined annotations during acquisition

Completely integrated design

- TIEMPO ViewProcessors have a straightforward design that simplifies complex operations.
- TIEMPO appears as new features within FLUOVIEW (no additional software to learn)
    - Works with all FLUOVIEW scan modes (surface, line, fast, clip scan, etc)
    - Works with all FLUOVIEW tools (analysis, visualization, file I/O)
    - Uses the intuitive FLUOVIEW look and feel
    - Available on all FLUOVIEW hardware platforms: Review Station, FV-NTX, FV-300, FV-500
- TIEMPO includes a database of ionic probes, tools for supplementing the database, and tools for measuring the apparent K_d of probes

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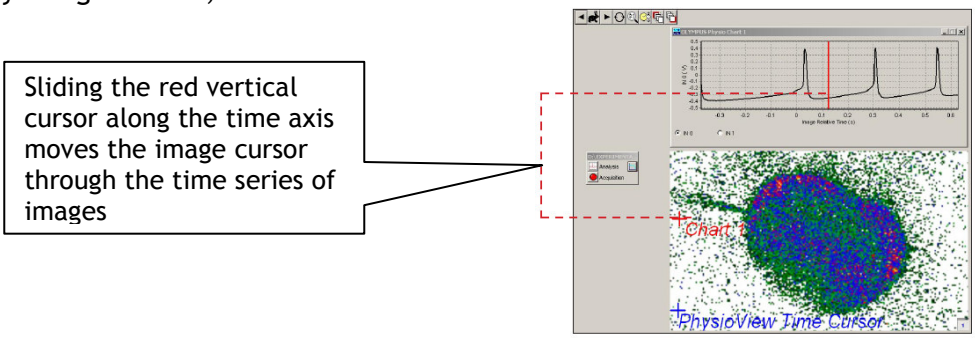
PhysioLink Add-On to OLYMPUS FLUOVIEW™

FLUOVIEW PhysioLink provides high precision synchronization of LSM confocal imaging with electrophysiological recordings, all within FLUOVIEW. PhysioLink synchronizes the two data sets during both acquisition and analysis and is compatible with popular electrophysiology systems (e.g. pCLAMP).

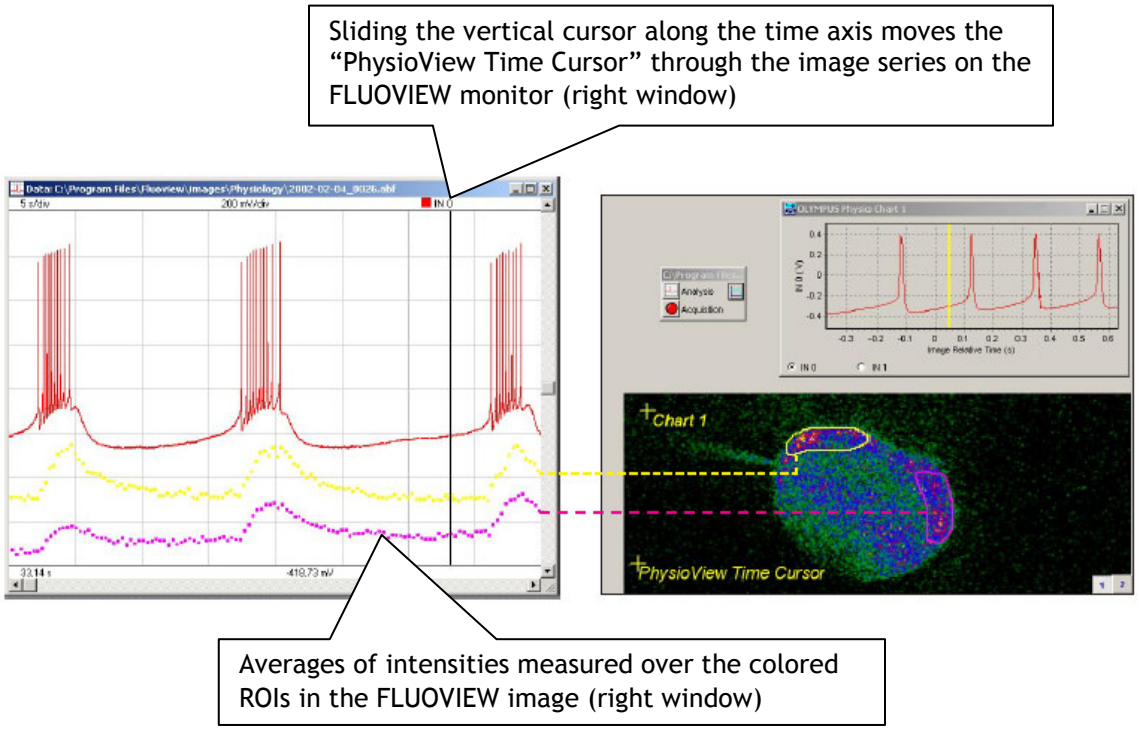
The base configuration requires:

- A computer for the FLUOVIEW system
- A computer for the electrophysiology system
- An Ethernet connection between the two computers, that rapidly conveys synchronization information between the two computers

During analysis, PhysioLink causes FLUOVIEW to display its images together with the electrophysiological data, in one window:



The electrophysiology monitor (left window, below) shows the time-course of the electrophysiology data and the fluorescence intensities averaged over the ROIs drawn on the FLUOVIEW monitor (right window).



Requirements

- The FLUOVIEW computer must run FLUOVIEW v5.0c with TCP/IP networking
- The pCLAMP computer must run Clampex 8 or later, preferably 9 or later for better time resolution, and have TCP/IP networking
- The two computers must be able to "see" each other across the network
- Saving of synchronization data between FLUOVIEW and Clampex experiments require(1) the FLUOVIEW data set must be saved to disk and (2) the Clampex acquisition must be complete before the FLUOVIEW data are saved

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