

## CinePlex Change Log (Last updated 2/5/10)

### Version 3.0.0

**NOTE TO CURRENT CINEPLEX V1 and V2 USERS: THE V3 VERSION OF CINEPLEX IS NOT COMPATIBLE WITH HARDWARE, SOFTWARE, OR LICENSING FOR PRIOR VERSIONS. DO NOT ATTEMPT TO INSTALL V3 ON SYSTEMS RUNNING PRIOR VERSIONS. IT WILL NOT OPERATE CORRECTLY OR, POSSIBLY, AT ALL.**

### CinePlex Studio

#### New Features:

- Low noise AVT Stingray cameras (640x480 resolution, up to 80 frames/sec)
- Record from either one camera, or TWO cameras simultaneously
- Triggered video capture for more accurate timestamping of video frames (50 microsecond accuracy)
- Is a normal Windows application and can run on a standard Windows PC with or without a network
- Can run on a regular PC in offline mode
- Has video capture capability, which can be synchronized with Plexon neural data acquisition systems – the Multichannel Acquisition Processor (MAP) system and soon the OmniPlex system.
- Produces standard video AVI files in MPEG format
- Allows user-specified prefixes for filenames
- Has essentially unlimited AVI file size (Microsoft extension to NTFS format eliminates the 4 GB file size limit)
- Has selectable image quality settings by changing nominal bit rate
- Records directly to internal hard drive
- Removable infrared (IR) filter, for use of IR illuminator to visualize and track animal in dark environment (useful for seeing animal in low-light environment while tracking LEDs mounted on headstage)
- Features Smart Tracking that uses robust algorithms for LED tracking, object contour tracking, and reflective color tracking
- Inserts tracking coordinates directly to the .plx data file as it is being recorded to disk (no need for cables to transmit coordinate information to the Plexon MAP and OmniPlex systems)
- Records position and time data in text files
- Analyzes contour motion across adjacent video frames to detect freezing behavior in fear-conditioning experiments
- Monitors animal speeds to create digital events when over/under threshold
- Monitors vectors between objects to create digital events when within/outside of an angle and tolerance
- Allows user to define static and dynamic zones of interest and zone sequences
- Monitors objects traversing zones and sequences to generate logical and digital events
- 24 programmable, event triggerable hardware digital output lines (screw terminal)
- Allows user to define combinations of events from one or two cameras to generate digital events
- Provides offline extraction of selected static and dynamic data from CinePlex video files
  - Reads any MPEG file created by CinePlex Version 3 or later
  - Allows selection of a time range or all of the file to be extracted
  - Allows selection of tab or comma delimited output files with or without header row
  - Allows selection of desired static data columns
  - Allows selection of dynamic data columns
  - Writes text file with selections implemented

### CinePlex Editor

#### New Features:

- Allows integrated viewing of neural data files (Plexon PLX, NEX) and AVI files
- Displays tracking position data overlaid on video
- Can seek and search based on event markers
- Has full digital video recorder (DVR) playback capabilities
- Has video-aided insertion of event markers and intervals
- Allows removal of temporal segments of neural data during artifact-generating behaviors (chewing, grooming, etc.)
- Has the ability to enter and edit position coordinate data from CinePlex Studio

- Has the ability to play a sound (standard or user-selected) when event markers or neural spikes occur during playback
- Supports Microsoft's extension to NTFS file format to be able to utilize AVI files larger than 4GB
- Saves neural data to Plexon (PLX) and NeuroExplorer (NEX) files, or exports to Excel, MATLAB, or text files

## Version 2.0.0

### CinePlex Capture

#### New Features:

- Capture is now normal Windows application and can run on a standard Windows PC.
- Plexon User Interface implemented.
- Output file naming convention now complies with the one used by RASPUTIN SortClient (user-specified prefixes (up to three characters) and date in the filename)
- User-selectable frame rate decimation for recording AVI files. This is also known as Nth frame recording
- Near IR (infra-red) recording and tracking is now an option with suitable cameras and lenses
- Many more warning and explanation messages added to help the user with operational knowledge, current status and in making decisions
- Message logging files are created and kept for the three latest times Capture has been started.

### CinePlex Markup

#### New Features:

- The latest 7.4.0 Sentinel Drivers are included.

#### Improvements:

- Corrected export of trodal data to PLX and NEX files

## Version 1.4.0

### CinePlex Capture

#### New Features:

- Worked out procedure to eliminate video freezing and tearing on the shuttle by switching display to 70 Hz.
- Added capability to delete arena and clear track by right clicking on the video image and selecting an option.
- Changed interface with remote control device so that recording cannot be started when certain error conditions, such as "Objects too large", are present.

#### Bug Fixes:

- Settings file fixes for arena transparency, image quality, points to show, filter details.
- Minor cosmetic fixes to the GUI.
- Corrected several errors that resulted in an object's track being erased, obscured, or left around incorrectly.
- Fixed error causing the first timestamp in a DVT file recorded remotely to have a very large positive number.
- Fixed error causing an object leaving the arena under certain conditions to be tracked.
- Fixed frame count discrepancy - AVI file showed one more frame than DVT file.
- Improved contour tracking algorithm to be more sensitive to color contrasts.