

Tracking of moving objects and organisms

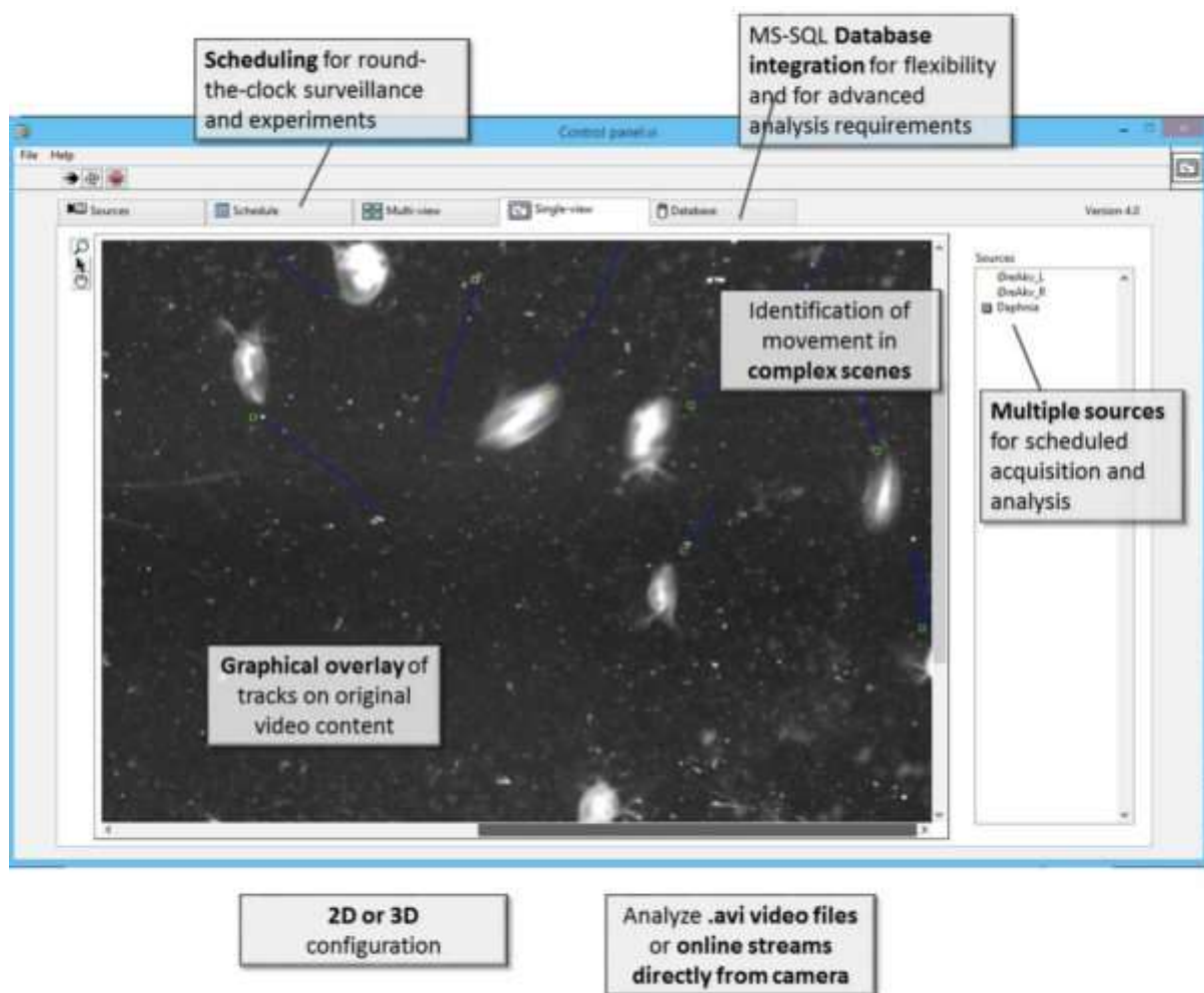
LabTrack is a Windows based software package for tracking moving objects, and is suitable for behavior analysis of organisms from bacteria to fish. LabTrack analyzes videos online (video streams in real time) or offline (saved video sequences).

Online analysis of video streams in real time

Signals from an array of cameras can be analyzed simultaneously. LabTrack can stream all input sources, including dual streams for 3D analysis, to .avi files for documentation and future analysis.

Offline analysis of saved video sequences

LabTrack analyses any .avi video source and it can handle multiple video sources for scheduled analysis.



LabTrack front panel with 5 tabs: “Source” for defining the source of the video stream (direct camera input, or saved video files), “Schedule” for scheduling the video analysis to enable analysis of multiple streams and repeatedly at fixed intervals if required, “Multi-view” is a panel for viewing 4 videos at the same time, “Single-view” for viewing one video in a larger frame, “Database” tab for database reports.

Tracking method

5 different threshold methods for tracking moving objects are available:

- Min background subtract works well for tracking any number of moving objects against an uneven background (default option)
- Edge filter is suitable for videos without complicated background disturbances, and where objects have low contrast against a uniform background
- Simple threshold, for strong and even contrast between objects and the background, allows tracking very slow (or stationary) objects.
- Single background subtract, for scenes with a static background and few moving objects at start.
- Average background subtract for objects that are moving fairly rapidly.

Data output

- SessionTime: Date and time of the analysis
- Group: Group name
- Source: The given source name
- Label: If tracks were labeled, the label is shown here
- Track ID: Each track is individually numbered
- Time: Time for each data point in seconds from session start
- X: X coordinate
- Y: Y coordinate
- Z: Z coordinate
- Area: Area of organism or particle (calibrated unit)
- Length: Length of organism or particle (calibrated unit)

Output is saved in spreadsheet style, and includes X, Y, Z coordinates for each organism and data point, ID and size of each individual organism/object. LabTrack can connect to a SQL database and automatically import data. This is a powerful tool for extracting data from large datasets.

Features

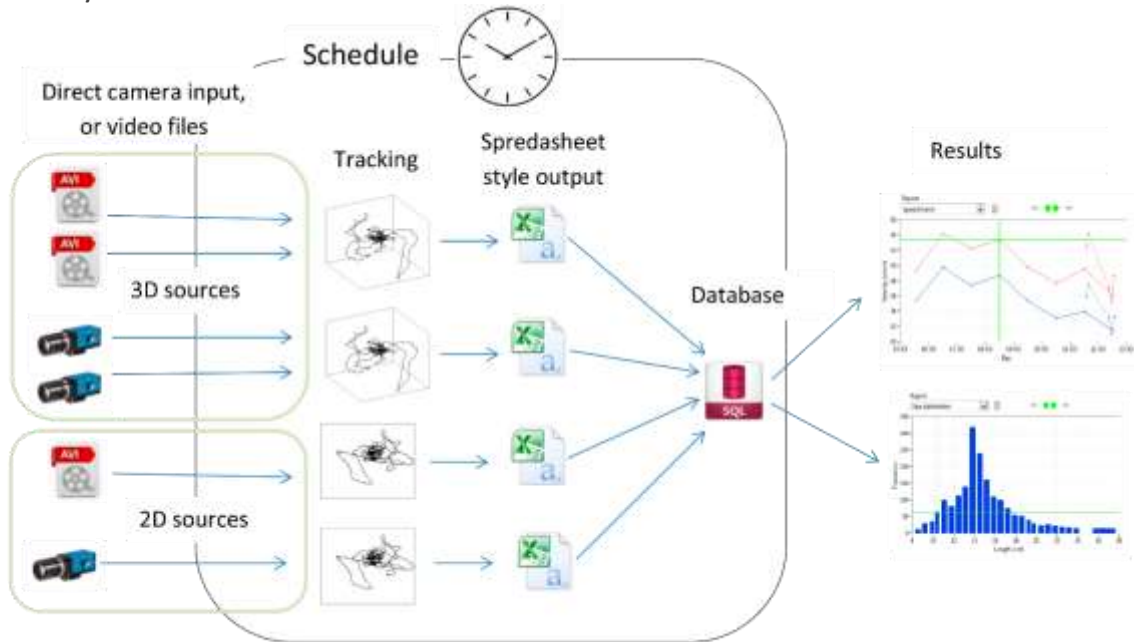
- Support for .avi video file sources or online sources directly from camera streams
- Multiple stream sources can be configured for scheduled acquisition and analysis
- 3D reconstruction from video files or in real-time from dual video streams
- 3D camera configuration as either orthogonal pairs or parallel pairs
- Graphical overlay of tracks on original video content
- Intelligent algorithms for identifying movement in complex scenes
- Video and track data output
- Scheduling for round-the-clock surveillance and experiments
- MS-SQL database integration for flexibility and for advanced analysis requirements

The license includes

- Free support during installation and startup
- NI vision runtime license

- User manual

LabTrack system overview



Sources can be direct camera input, or saved video files. Output is saved in spreadsheet style, and includes X, Y, Z coordinates for each organism and data point, ID and size of each individual organism/object. LabTrack can connect to a SQL database and automatically import data. The database is a powerful tool for extracting data from large datasets.