EthoVision XT - New Features
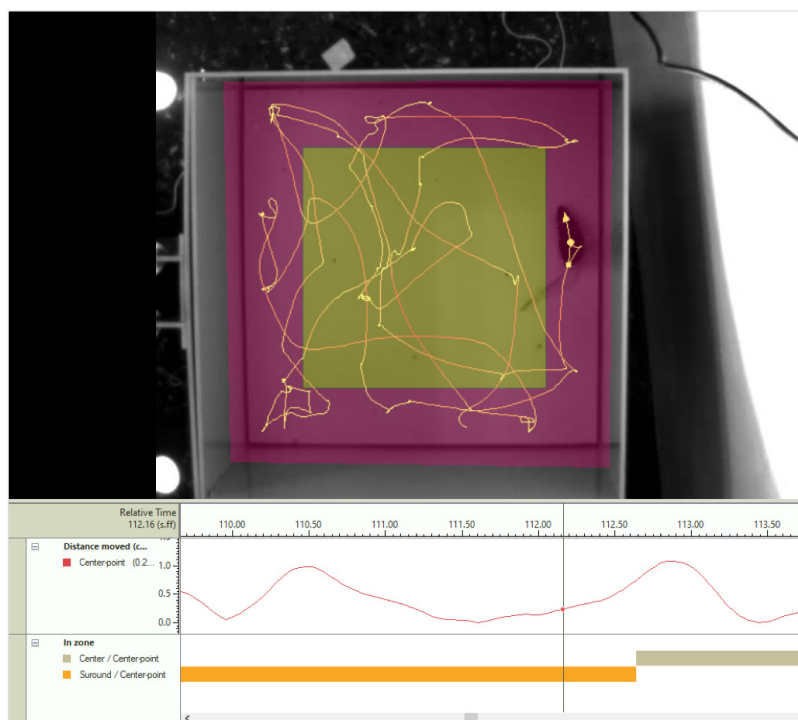
What's new in the latest versions?

COMPARE THE FUNCTIONALITY

EthoVision XT has been around for almost 30 years, and during these years it has evolved from video tracking software into a software platform designed to be at the core of the lab.

A detailed study of animal behavior is important in many studies, from general behavioral neuroscience, to toxicology and pharmacology. Video tracking takes the guesswork out of behavioral observations.

EthoVision XT tracks activity, movement, path shape, angular velocity, and even automatically recognizes some behaviors such as grooming and jumping.

This guide compares main new features over the last versions making it easy to compare functionality.
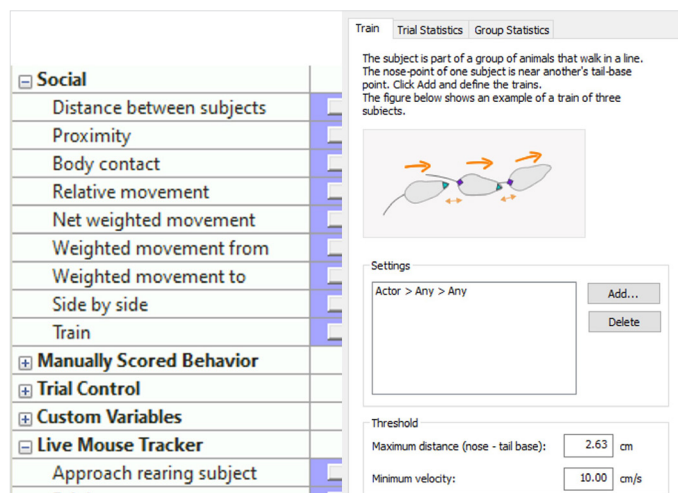
FEATURES | VERSION NUMBER

FEATURES	17.5	17	16	15	14	13	12
Import and analyze data from Live Mouse tracker	✓						
Plug-and-play USB connection to the Ugo Basile fear conditioning chamber	✓						
Video recording and playback using the GPU (graphics card) More power - lowers CPU load in demanding situation	✓						
Deep learning tracking in 4 arenas simultaneously	✓	✓					
Experiment merging	✓	✓					
Software based licensing	✓	✓					
Performance (speed) improvements	✓	✓					
User defined line thickness in track plots	✓	✓					
Trial and hardware control subrules can now be longer than 24 hours	✓	✓					
Latest Basler drivers	✓	✓					
Deep learning body points detection	✓	✓	✓				
Improved subject contour filter and nose-tail swap correction	✓	✓	✓				
New template for zebrafish cross-maze	✓	✓	✓				
Create dependent variables with JavaScript code	✓	✓	✓				
New video codec, tutorials, GigE camera support and test button for external commands	✓	✓	✓				
Body points visual during manual scoring	✓	✓	✓				
Trial control variable as independent variable	✓	✓	✓				
Heatmap scale	✓	✓	✓	✓			
Easier camera settings	✓	✓	✓	✓			
Adjustable statistics layout	✓	✓	✓	✓	✓		
Support for USB and IP cameras and multi-port boards for GigE and USB3 cameras	✓	✓	✓	✓	✓		
Analysis of minimum and maximum durations of state parameters	✓	✓	✓	✓	✓		
Copy-pasting in trial control and data selection	✓	✓	✓	✓	✓		
Manually scored behavior: extended functionality: score after tracking, edit, use for trial contro	✓	✓	✓	✓	✓	✓	
Create custom parameters by combining existing ones	✓	✓	✓	✓	✓	✓	
Free interval selection: compare behavior before and after an event	✓	✓	✓	✓	✓	✓	✓
New body angle and zone parameters & detection models for rodents and fish	✓	✓	✓	✓	✓	✓	✓

NEW FEATURES EXPLAINED

IMPORT AND ANALYZE DATA FROM LIVE MOUSE TRACKER

Live Mouse Tracker (LMT) is software which in combination with a DIY hardware setup developed by the Pasteur institute can be used to measure social interaction in up to 4 subjects simultaneously.

EthoVision XT 17.5 now supports direct importing of data from LMT and analysis in EthoVision XT as opposed to complex processing of data in a Python framework.
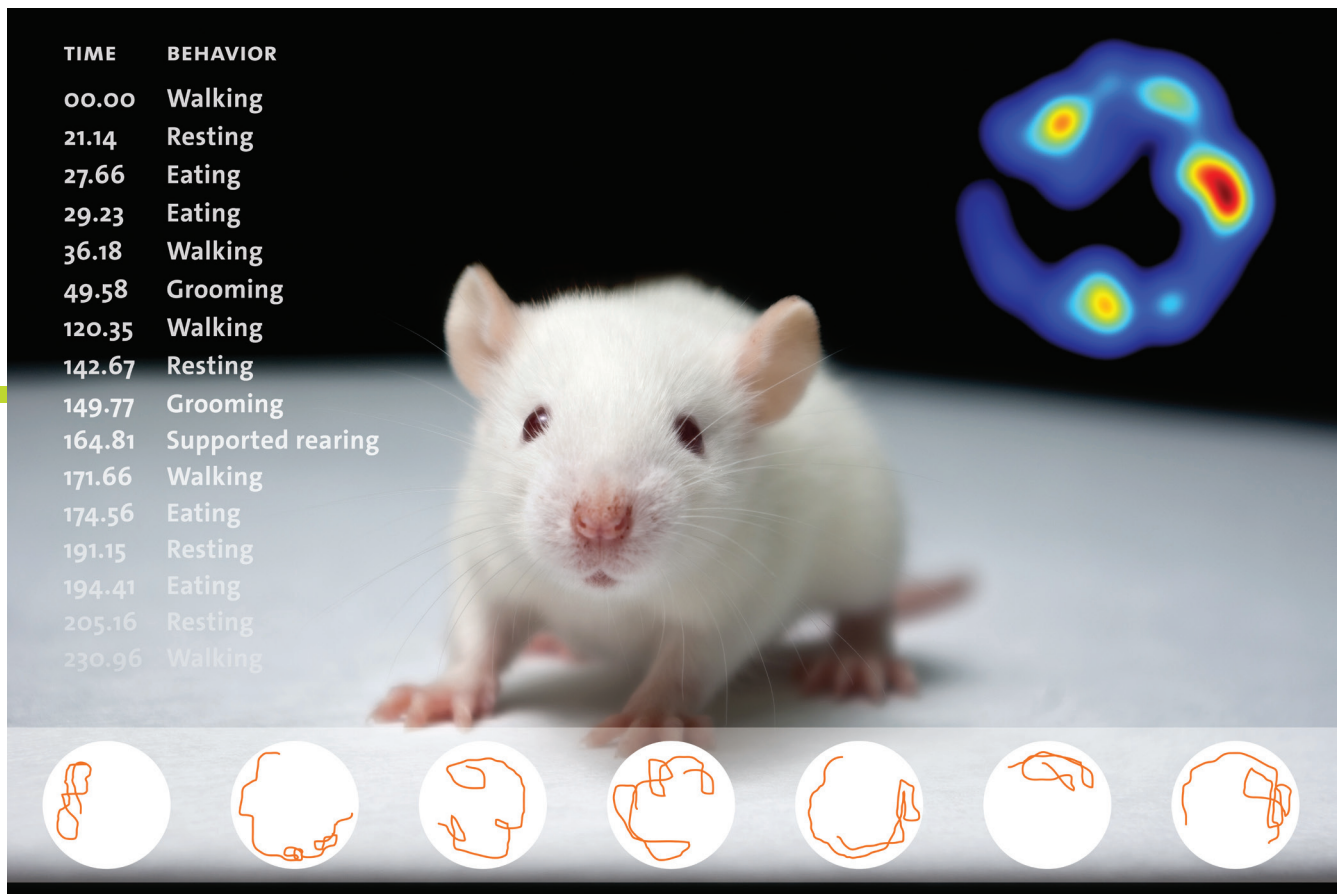

UGO BASILE FEAR CONDITIONING CHAMBER: PLUG-AND-PLAY

Setting up a fear conditioning protocol has never been easier in EthoVision XT. Version 17.5 now supports easy USB connection with up to 4 fear conditioning chambers from Ugo Basile. Easily set up your experiment and define all settings within EthoVision XT.

AUTOMATED ADJUSTMENTS OF DEEP LEARNING SETTINGS

When using deep learning tracking, you can now use the automated setup in detection settings for the nose-tail detection of your subject(s).

TIME	BEHAVIOR
00.00	Walking
21.14	Resting
27.66	Eating
29.23	Eating
36.18	Walking
49.58	Grooming
120.35	Walking
142.67	Resting
149.77	Grooming
164.81	Supported rearing
171.66	Walking
174.56	Eating
191.15	Resting
194.41	Eating
205.16	Resting
230.96	Walking

MORE DATA ANALYSIS OPTIONS WITH JAVASCRIPTS

Create custom data analysis options with Javascripts such as:

- *GetBehaviorEvent:* to extract events that were coded manually

- *GetViewDirection:* to extract the value of the head direction

- *Point:* to define a new point of interest with 2D coordinates

- *GetPointPoi:* to extract the coordinates of a point of interest or the center of a zone

FURTHER IMPROVEMENTS

- EthoVision XT 17.5 includes the newest driver software for Basler USB 3.0 and GigE cameras (Basler pylon version 7.1.0).

- Video recording and playback uses the graphics card (GPU), which lowers CPU load in demanding situations.

- Time window in NEST can now be longer than 24 hours

- Group charts: *'apply to all'* button now works and the *'reset to default'* button now resets the values and slider position to defaults

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