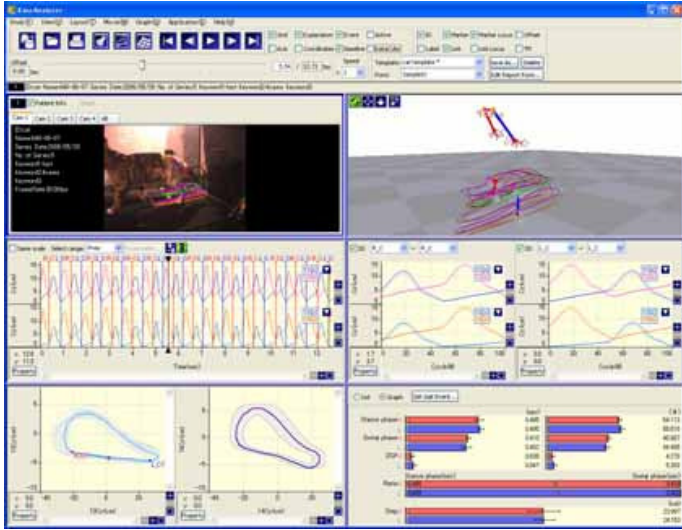
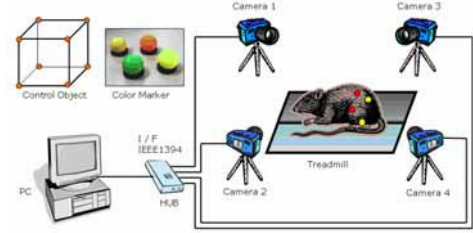


The simple and compact treadmill system for objective gait analysis.

Simple hardware setup with four (or two) cameras connected to a PC. Automatic detection of heel contact events and toe off events of both feet. Calculation of standard gait parameters (swing, stance, double support etc) Speedy 3D tracing by color marker recognition. Applicable to various animals and movements by adjusting marker size and color.



Simple hardware setup



This space-efficient capture system adopting small-sized cameras allows you to build a system in almost any location. These cameras can be synchronized simply by connecting them to a PC via fire wire cables. You can make simple and compact motion capture environment.

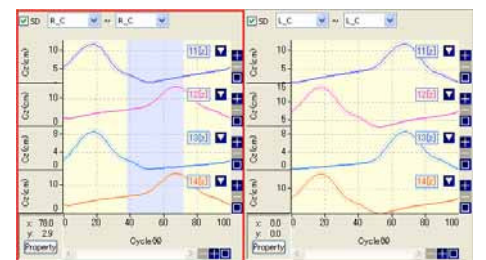
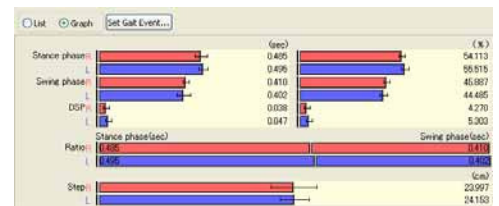


Various features for gait analysis -Detection of gait events and normalize-

Name	DSP	% Stance	% Swing	Period	Ca...	Stride	Step			
000000000	0.056	129.02	0.852	34.31	0.410	35.29	0.020	4.27	39.63	46.50
SD	0.034	0.031	1.84	0.015	1.84	0.010	1.52	19.84	2.82	40.80
CV	3.263	6.399	3.41	3.763	4.02	46.223	44.87	20.40	5.22	
000000101	0.056	129.02	0.852	34.31	0.410	35.29	0.020	4.27	39.63	47.00
SD	0.040	0.022	2.13	0.059	2.13	0.016	1.76	19.66	1.98	40.80
CV	4.445	4.438	3.84	0.593	4.79	34.772	33.22	20.42	4.14	

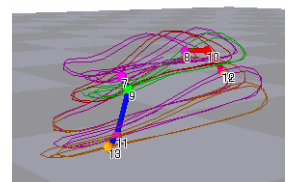
Heel contacts events and toe off events are automatically detected from 3D coordination. The software calculates temporal factors (swing, stance, double support) and distance factors (step, stride), and show variance and difference between both feet.

Also, each cycles of movement are retrieved automatically and normalize the multiple cycles of movement.



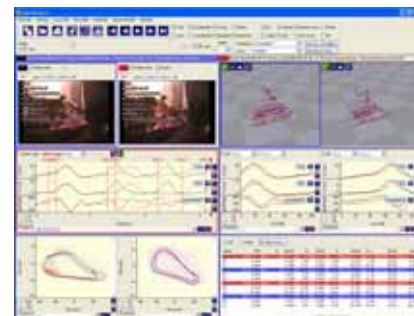
Speedy 3D calculation

The processing time of 3D calculation has been much reduced. The movie is saved on a PC directly, and all markers can be traced at a time.



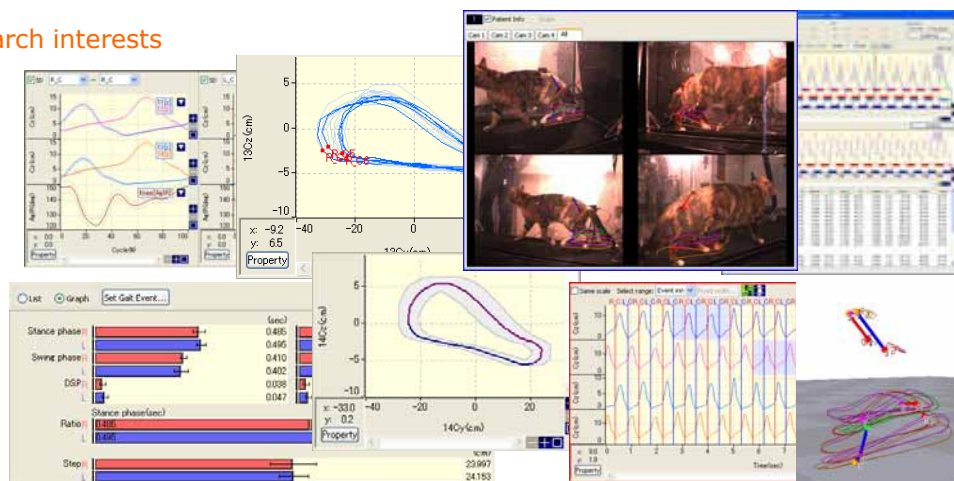
Data comparison

You can open multiple data and displays multiple movies, stick pictures, and graphs in piles. You can compare multiple animals or timeline



Flexible graph display for various research interests

The software displays movie from four cameras, stick picture, gait parameter, normalized graph, XYZ coordination, timeline of joint angle. You can make a template of display items, which enables you to evaluate the data based on the common parameters.



Specification

Model		KINEMA TRACER
Cameras	Interface	Fire wire IEEE1394
	The number of units	4 or 2 units
	Synchronization method	Automatic
	Resolution of images	VGA640×480
	Frame rates	30 / 60 fps
Markers	Type / Shape	Colored / Spherical
Calibration	Method / Shape	DLT method, modified DLT method lens distortion correction / Cube
Basic analysis		XYZ plot, Speed, Acceleration, Angle of joints, Angular velocity of joints, Angular acceleration of joints
Gate analysis		Normalization, Average, SD, and CV of Stride length, Step length, Stance phase, Swing phase, Double support phase, Gait cycle, Cadence, Body-sway
Rendering		Stick picture, Tracking, Super impose, Time series graph, Lissajou graph, Normalization graph, Numeric list, Rendering items configuration (Template)
Output Data Digitize		XY plot, XYZ plot, Graphs, Numeric lists Auto-tracking, Reverse auto-tracking, Multiple maker auto-track, Position anticipation, Auto-interpolation, Manual-digit