QUALISYS
Motion Capture Systems

CAPTURE MOTION
GAIN KNOWLEDGE

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THE CONCEPT

Project Automation Framework (PAF) is a fully automated motion-capture system, featuring sports modules for running, cycling, golf and baseball.

The framework use the cameras and automates the process from data collection to the finished report. It allows you to increase your productivity and generate a return on your investment.

Automation Framework

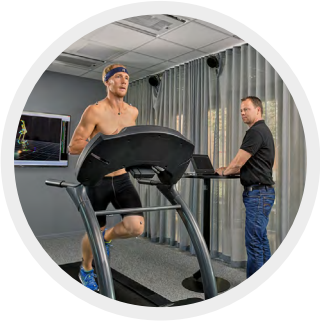
STREAMLINED TOOLS FOR SPORTS PERFORMANCE

To truly excel in today's competitive sports environment, you need access to detailed knowledge of how the human body moves while performing the sport in question. Based on that knowledge, the performance of the individual athlete can be truly understood and optimized. Our sports modules are perfect tools that allow sports researchers to go from data capture to finished report in a matter of minutes.

The foundation of the analysis modules for sports is Qualisys' leading marker-based motion capture technology. Its unparalleled precision and resolution is the result of 25 years of constant development in close cooperation with the global research and healthcare communities.

The sports modules are add-ons to our Qualisys Track Manager (QTM) software and they allow you to streamline your work flow by automating repetitive tasks. Just create a session and perform the measurements you want, using the simple and intuitive graphic interface. Then, once the session is finished, creating an online report based on the collected data is simply a matter of clicking a button.

Our sports modules provide optimized marker sets and analysis work flows, catering for the unique reporting demands of each sport.



RUNNING

CYCLING

GOLF

BASEBALL

Sports Modules

The sports modules currently available involve running, cycling, golf and baseball, with more modules to follow. Outside the field of sports there are also equine and gait analysis modules.

Researchers with specific requirements also have the option of developing custom modules for their specific requirements.

References Sport Performance

Salming RunLAB

Swissbiomechanics AG

RSScan International

Skyros Sport

Virginia Commonwealth

Reebok

Salomon

University of Nebraska

References Sport Research

Bosön/RF, Sveriges Olympiska Kommitté

Norwegian University of Science and Technology, NTNU Olympiatoppen

Liverpool John Moores University

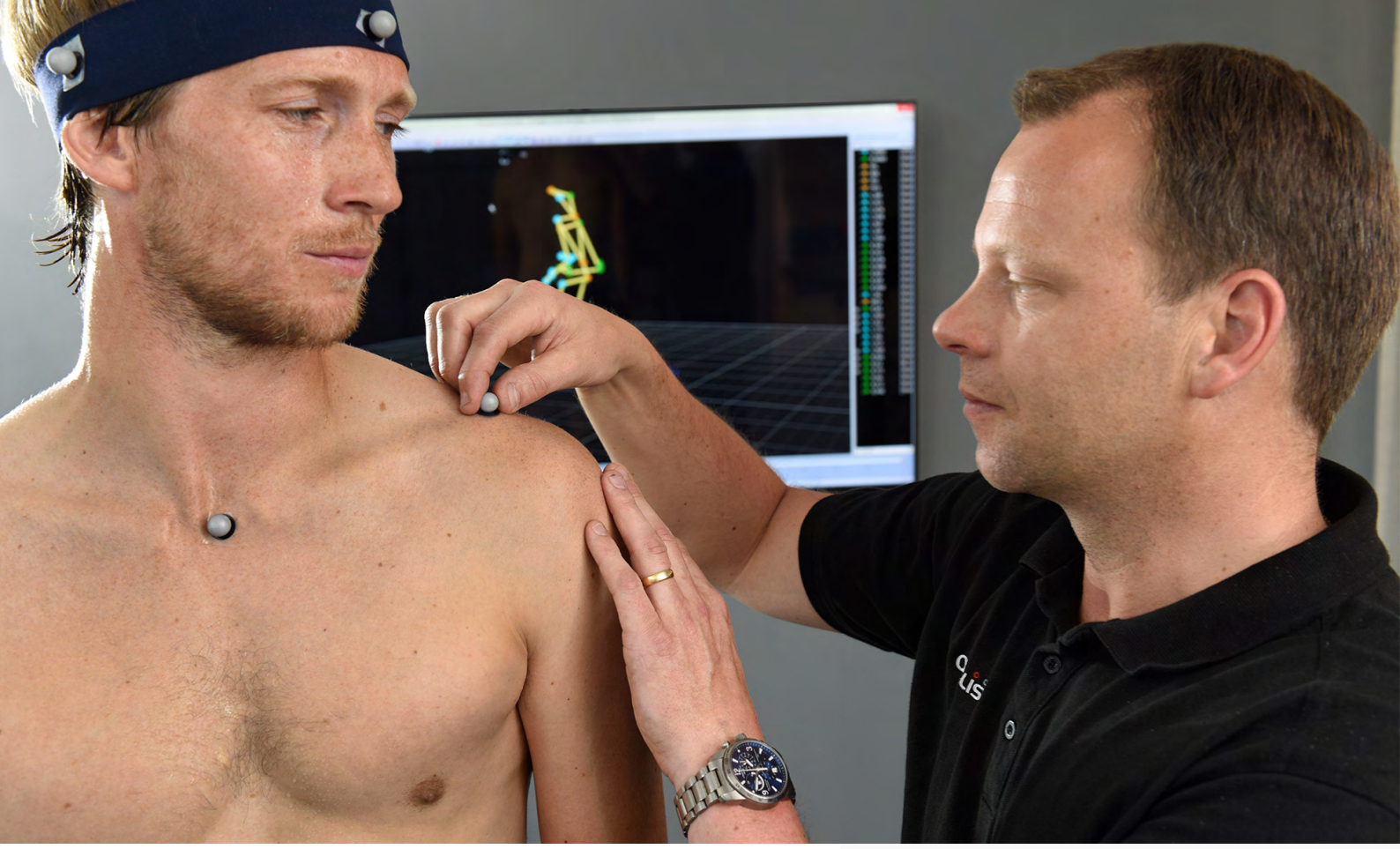
JISS, Japan Institute of Sport Science, Tokyo

University of the Sunshine Coast, Australia

Sochi Federal Training Sport Center (Winter Olympic games 2014 Sochi)

Texas Health Ben Hogan Sports Medicine, US

The Pennsylvania State University, Golf Teaching and Research Center, US



Running module

Running analysis has a long history at Qualisys. Since 2012, our running module has been proven both in research, performance optimization as well as in commercial use all over the world. Our systems are equally at home in academic research labs as they are in running stores and athletic centers. With the running module, a recognized scientific method is made available to you in an efficient and easy-to-use manner.

The module gives you the ability to measure lower-body movement, which requires a minimum of five cameras tracking 22 markers, and also measures full body performance utilizing eight or more cameras and a full-body marker set.

The work flow is easy and seamless. A guide helps you to correctly place markers and you use a dedicated control panel in QTM to record your data. The resultant report displays a range of relevant parameters, such as pelvic rotation, knee angle and more.

FEATURES

- Proven track record
- Full 3D movement tracking
- Lower and full-body version
- Scalable setup
- Web report included at no extra cost

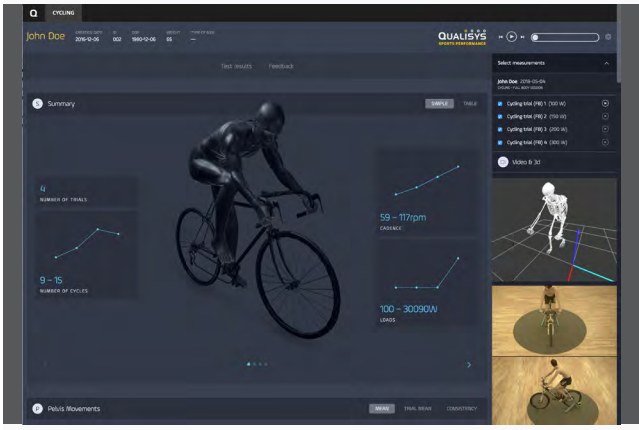
Cycling module

This module is designed to develop a deep understanding of the biomechanics of a cyclist's movements in a sport that has traditionally focused on the mechanics and performance of the bike itself.

In fact, the cycling module combines the two approaches. The cameras accurately track the movement of markers on both the bike and the cyclist, providing a biomechanical assessment of the cyclist as well as detailed data on how the rider and bike move as a unit. Adjustments made to the bike are recorded making performance comparisons easy for bike fitting purposes..

The module measures bilateral movement using six or more cameras including lower body, lower body plus trunk, and a full body analysis are supported.

Setting up the session is easy and a full report is just a click away. The report can also feature additional relevant information, such as the make and model of bike. It also displays a 3D - 360° view that can be read from any angle, as well as information on the technical details of the rider's movements. Each report can contain up to four different setup conditions, including the different loads and body positions, among others..



FEATURES

- Full 3D movement tracking
- Lower body, trunk, and full-body tracking
- Accurate measurements of bike dimensions
- Web report
- Up to four trials per report

Golf module

The complexity and sheer speed of the movements that make up a golf swing means that it s nearly imposible to accurately measure and analyze a golf swing without high-resolution, 3D motion capture technology. Qualisys is the leader in this field.

In the golf module, we have packaged our mocap technology into a single comprehensive, easy-to-use solution. Several years of continuous development in cooperation with some of the top golf research labs in the world ensures that it offers a truly advanced performance.

The module is designed to be an off-the-shelf analysis tool with little or no customization required. It is capable of providing useful information using even a partial marker set if time is limited.

Flexible recording, including the use of sound triggers, ensures that the system captures all the relevant data. Force plates may be used to capture ground reaction forces and measure center of pressure.

A single click then generates a web report including relevant parameters such as stance metrics, swing plane, and kinematic sequence.

FEATURES

- Covers all relevant biomechanical parameters
- Full or reduced marker set options
- Force plate integration available
- Filters adapted for golf
- Web report

Baseball module

A baseball pitch is a fast and complex action, where small nuances make all the difference to performance. It is also a high-stress movement, in which the risk of injury is always present. The baseball module allows you to analyze baseball pitch in uncompromising detail using Qualisys' state-of-the-art mocap technology.

The body marker set has been specially adapted to capture every minute detail of the pitching motion, tracking all relevant full-body biomechanical parameters. The output not only includes performance indicators, but also identifies injury risks.

As with all analysis modules, setting up and conducting a session is very straight-forward. The system automatically identifies all pitch events and performs the biomechanical calculations. A single click then generates a web report containing information on variables such as stride length, shoulder rotation in different planes, shoulder angular velocities, and much more. It also includes 3D model snapshots of each key event.

FEATURES

- Tracks all relevant biomechanics
- Full-body analysis
- Body model customized for pitching
- Right- and left-handed options
- Web report

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