



# iSen 3.0

INERTIAL MOTION CAPTURE BASED ON 400HZ, WI-FI IMU



## Wireless

The system operates on a standard Wi-Fi protocol (2.4GHz and 5GHz). This feature turns STT-IWS inertial sensors into open and versatile devices.



## 400Hz

The sample rate is selectable by the user and can range from just a few Hertz up to 400Hz: that's an exceptionally high capture speed, challenging even most of the optical systems in the market.



## Flexible configurations

iSen 3.0 lets you work with any sensor configuration, from just a single STT-IWS sensor to a 17-sensor, full-body configuration – all of them working at 400Hz.



## Synchronized

All measurements are automatically time-stamped in order to guarantee an actual synchronization.



## Accuracy

The accuracy of STT-IWS units is among the best of its kind: Pitch/roll < 0.5 degrees (RMS) and Heading < 2.0 degrees (RMS).



## Data logging

Although STT-IWS sensors typically work within Wi-Fi range, they can also operate autonomously. This is particularly interesting during on-field motion analysis. Just configure the capture and get them synchronized inside the wireless network, then set them to 'data logging mode' and let the subject walk out of the coverage area.



## Video feedback

Enabling an inexpensive HD webcam or high-end, high-speed video camera for simultaneous video recording is straightforward.



## Integratable

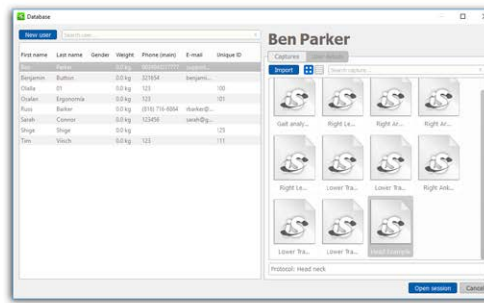
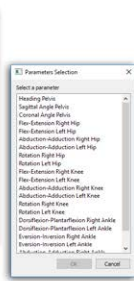
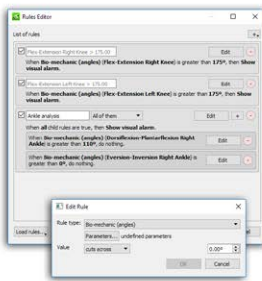
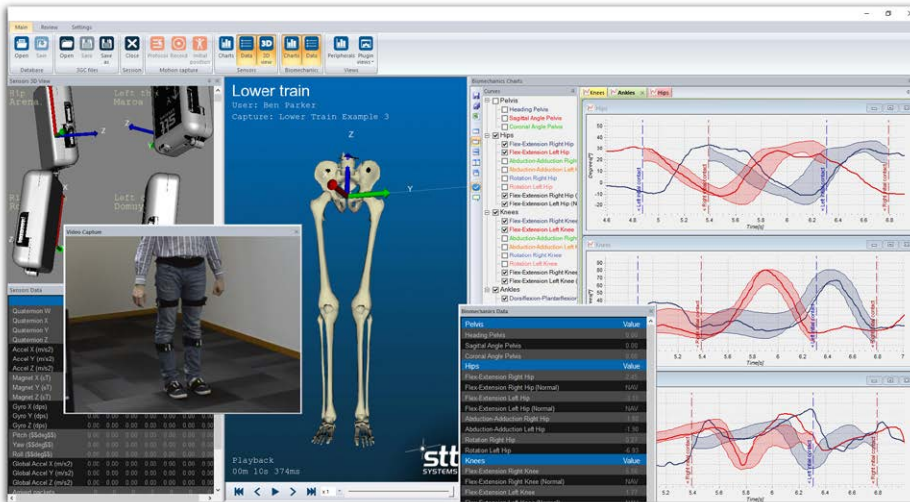
STT-IWS features an analogue input for up to 8 ch. @ 1 kHz / 10-bit data (0-3.3 V). Also, an auxiliary serial port can be used for devices such as GPS receivers.



## Custom reports

The system can automatically generate a report with the results of the analysis. The template for that report can be edited easily by the user.

# iSen software interface



## DATABASE

Easily keep track of users and captures. Import/export files.

## 3D VISUALIZATION

See the motion in real time.

## AUTOMATED REPORTS

Generate reports with a click and easily edit the templates.

## BIOFEEDBACK & RULE EDITOR

Create your own lists of real-time events with visual / audio feedback.

## INTEGRATIONS

Combine motion data with force plates, surface EMG, etc.

## TIME EVENTS

Automated and manual events can be added.

## NORMALIZED DATA IN GAIT

Display normalized curves as a quick reference.

## REAL-TIME GRAPHS & STATS

All the information is updated instantaneously & displayed.

## VIDEO SYNCHRONIZATION

Webcams & high-speed cams.

# Sensor configurations



Choosing the right sensor configuration is crucial. Given a certain amount of sensors, the user can access protocols requiring that same amount or less.

## 1 STT-IWS

- ▶ Rigid body tracking.
- ▶ Basic gait & running.

## 2 STT-IWS

- ▶ Individual joint analysis (ankles, knees, hips, back segments, neck, shoulders, elbows).

## 4 STT-IWS

- ▶ Full single leg (pelvis-foot).

- ▶ Full single arm (shoulder to hand).

- ▶ Two-fold joint analysis (left and right simultaneous analysis of ankles, knees, hips, shoulders, wrists).

- ▶ Full spine (pelvis-neck).

## 5 STT-IWS

- ▶ Simple upper body tracking and analysis.
- ▶ Gait analysis (pelvis,

both hips and both knees).

## 7 STT-IWS

- ▶ Full gait analysis protocol (pelvis, hips, knees and ankles).

- ▶ Full upper body tracking.

## 14 STT-IWS

- ▶ Full body tracking.

## 17 STT-IWS

- ▶ Full body tracking.

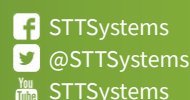


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STT has been working on motion capture and machine vision technologies since 1998