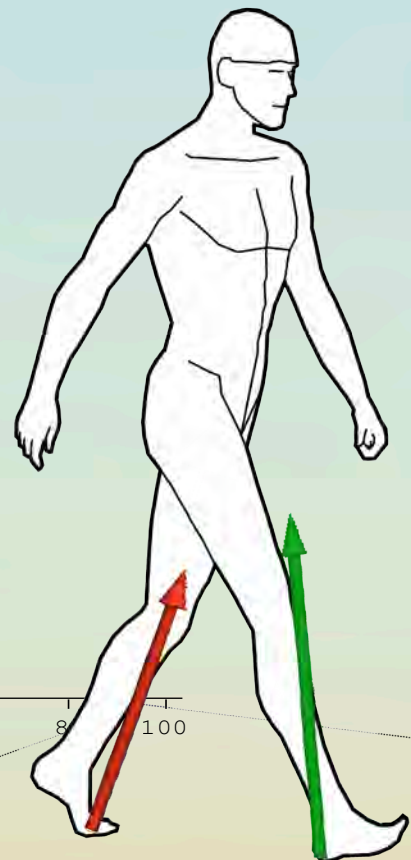
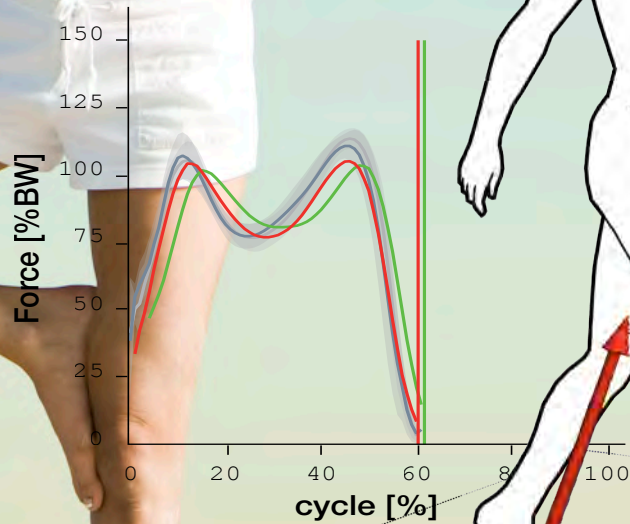


# BTS DIGIVEC

Augmented reality  
solution for the forces  
analysis in static and  
dynamic posture

## Vertical Force



**BTS** Bioengineering

# BTS DIGIVEC

## Augmented reality solution for the forces analysis in static and dynamic posture

BTS DIGIVEC is an intuitive solution easy to use for the evaluation of the dynamic postural and stabilometric patients' behavior.

The quick test execution, which does not require any subject preparation, together with the automatic report generation, make BTS DIGIVEC suitable and productive for a wide range of applications:

In the clinical field, it is an essential tool for rehabilitation centers. Thanks to the real time analysis, made through the new BTS P-6000 platforms, it provides more accurate data for the evaluation of orthosis, prosthesis and bite efficacy.

In the sport field it supports the lower limbs biomechanical evaluation, providing useful data about the athlete performance, allowing injury risk prevention and rehabilitation treatments and training planning. It is also particularly suited to carry out teams screening.

### Augmented reality

BTS DIGIVEC provides an augmented reality system for real-time analysis of dynamic movement and posture. Starting from the data collected from force platforms, BTS DIGIVEC shows the ground reaction force, drawing a 3D vector on the subject video during the test execution for an immediate evaluation of the forces exerted by the lower limbs and of the possible asymmetries.

### Forces analysis

The forces analysis allows the evaluation of the subject dynamic behavior during walking, running and jumping. Understanding the action of the reaction forces on the lower limb joints, allows to prevent or to restrict the functional overload.

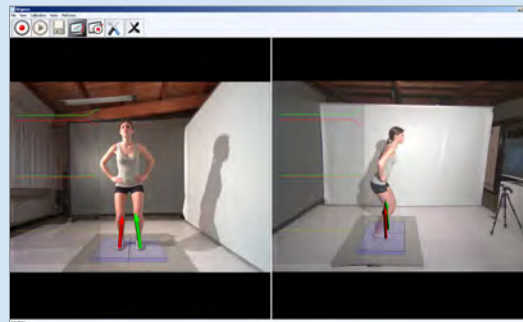
### Stabilometric analysis

The stabilometric analysis allows the evaluation of the subject balance level by measuring the COP (center of pressure) position and the quantification of the postural oscillation during the standing position. The stabilometric test performed with and without postural deprogramming (i.e. with opened and closed eyes) allows the evaluation of oculomotor, vestibular, occlusal and proprioceptive interferences. If performed in monopodal support, it allows the assessment of the proprioception of the osteo-joint apparatus.

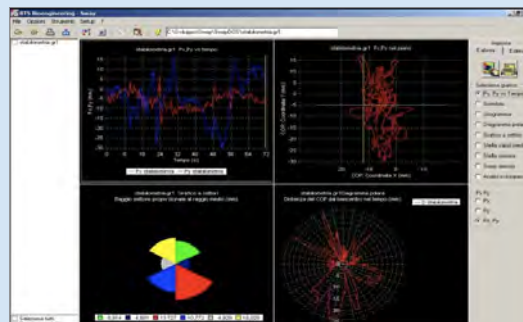




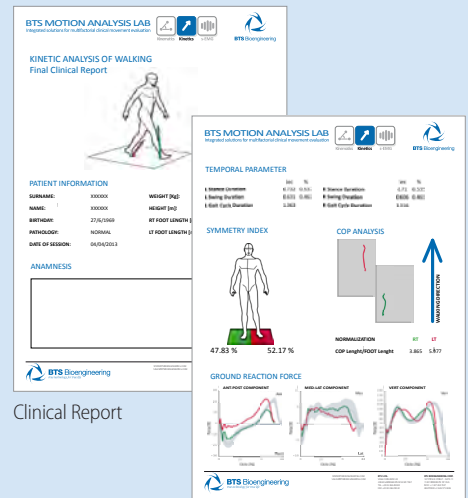
## Software features and applications:



BTS Digivec



BTS Sway



Clinical Report

1



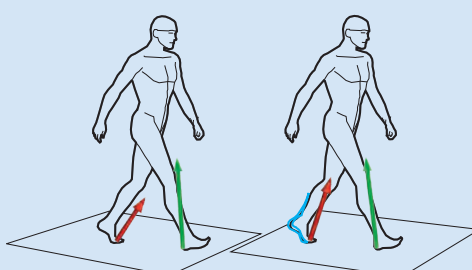
### Symmetry evaluation

It allows the evaluation of the GRF (ground reaction force) vector symmetry on the frontal plane pointing out any possible compensatory pattern of limb protection.

#### Example

Visualizing in real-time the two reaction vectors generated from a patient standing with one foot on each platform, it is possible to evaluate the load asymmetry and to assess the correction achieved through the use of orthotic insole or bite.

2



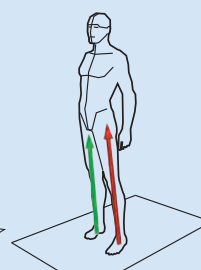
### Orthesis choice

It allows the evaluation of the orthesis correction effects.

#### Example

Comparing the terminal stance of post-stroke patient, walking with and without AFO, it is possible to check the position of the GRF vector respect to the hip or knee joint centers in the two different conditions. In that way it is possible to evaluate the correction of an augmented extensor moment of knee or of an external flexor moment of hip, obtained with the use of the orthesis. By analyzing the vector amplitude it is also possible to evaluate an increasing of the intensity value correspondent to the augmented capacity of the limb to hold the body weight with consequently increasing of step length.

3



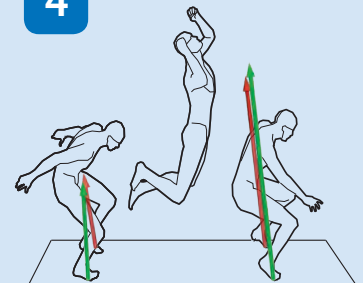
### Compensatory strategy

It allows the evaluation of the effects of any possible compensatory strategy adopted by the patient.

#### Example

For instance a compensatory toe-out stance during walking reduces the amplitude of the knee adductor moment.

4



### Preventive intervention

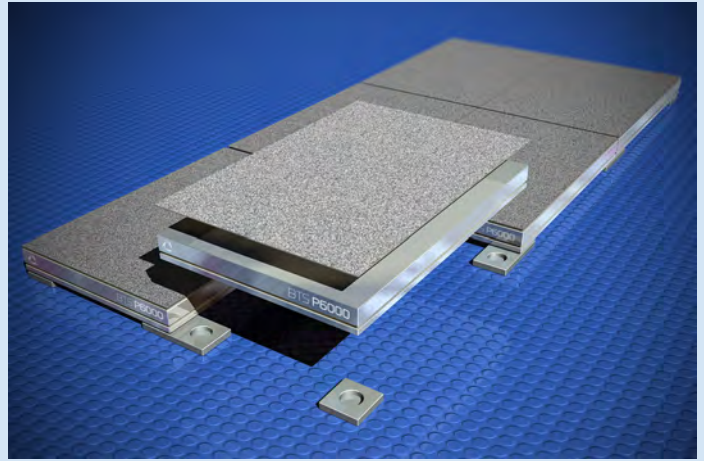
The possibility of assessing the deviation of the reaction forces action respect the lower limb joints, allows an early intervention to prevent or contain the functional overload.

#### Example

Suitable to objectivize a situation in which the reaction force creates an adductor knee moment overloading the medial compartment and/or to evaluate the effect of the use of an orthotic insole. By visualizing the ground reaction force vector generated during the gait stance phase it is possible to choose an orthotic insole evaluating in real-time how it modifies the position of the vector reducing the adductor knee moment.

# BTS DIGIVEC

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Hardware components	Std. Equipment	Add-ons
BTS P-6000* - 3 configurations available:	●	
2 platforms (total sensing area: 600x800mm)		
4 platforms (total sensing area: 1200x800mm)		
8 platforms (total sensing area: 2400x800mm)		
2 BTS sVIXTA video cameras	●	
Pre-configured ready to use workstation		●
Modular and multiconfigurabile walkway for platforms positioning		●

Software included	Std. Equipment	Add-ons
BTS SMART-Clinic	●	
BTS Digivec	●	
BTS Sway	●	

Technical features and equipment may be subject to change without notice.  
Images shown in this brochure are indicative only, color or model may differ from the picture shown.

\* Patent pending



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