

TRAINING LAB



**PORTABLE LABORATORY
FOR EVALUATION AND
TRAINING**



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microgate.it





Microgate was born in Bolzano in 1989 out of an idea of brothers Vinicio and Roberto Biasi:

Whatever you can do, or dream you can do... begin it. Boldness has genius, power and magic in it."
Goethe

With this approach, the company has grown in 4 sectors - Professional Timing, Training & Sport, Medical Rehab and Engineering - and exports its products to more than 40 countries worldwide.

It has a team of over 50 experienced professionals, 18 of whom are engineers (5 with a PhD), that takes care of the whole technological development process: from design to prototyping, through to final production and customer care. A production process whose quality has persuaded some of the world's most significant companies in their fields - from sports to astronomy, as well as industry and the field of clinical rehabilitation - to choose Microgate as their partner.

- **Over 30 years of experience**
- **Complete production cycle from design to development, from engineering to marketing**
- **Headquarters: 11,000 m2 surface area**
- **Clean Room: 400 m2 surface area**
- **Electronic and mechanical laboratories, climatic chambers, optical test areas**



Vinicio Biasi



Roberto Biasi



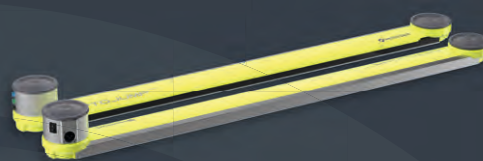
Federico Gori



Product Overview



GYKOPRO



**OPTO JUMP
NEXT**



**WITTYPRO
TAB**



**WITTYPRO
GATE**



**WITTYPRO
SEM**



**WITTYPRO
TIMER**



PRO MOVE



**WITTYPRO
RFID**



for more information:
training.microgate.it

Advantages of Microgate systems

SCIENTIFIC VALIDITY

- OptojumpNext: gold standard, used in over 3000 scientific studies Witty:
- cited in over 500 publications
- Brain HQ: 250 publications

DATA OBJECTIVATION

- Sharing data/reports
- Measuring and monitoring the training load
- Accident risk prevention

FLEXIBILITY

- Different types of configuration
- Scalability
- Indoor and outdoor Integrability

PORTABILITY

- Easily transportable for applications off-premises

COST-EFFECTIVENESS

- High value with reasonable costs
- Excellent price-quality ratio recognised on the market

PROVEN EXCELLENCE

- Reliable products with over 20 years of business

DURABILITY

- Built to last over time and provide constant performance

Choose Microgate for unrivalled quality and reliability.



We evaluate and train **movement** in a complete manner, based on **objective data**



MOBILITY

Monitoring joint flexibility. Quickly objectivate the angle of joint movement providing information about the degrees reached, fluidity of movement and speed of execution.



DYNAMIC

Quantifying performance, identifying behaviour and the presence of any imbalances in the specific motor movements of different sports.



Evaluating and monitoring the level of balance control and postural strategies, in both static and dynamic situations. We provide objective and comparable data.



STABILITY



COGNITIVE TRAINING

Improve your brain and cognitive functions with a scientifically validated training solution based on 30 years of research in the field of neurological science. Engaging and adaptive exercises designed to provide useful and meaningful training for every athlete.



STRENGTH

Measuring and monitoring strength and power, both when working with weights and in jump tests for more specific testing.



Cognitive-motor training

While it is true that physical training is a fundamental pillar for optimising sports performance, in recent years the importance of combining it with cognitive training has emerged with increasingly greater clarity.

A pioneer of this new frontier is the American neuroscientist Michael Merzenich, who demonstrated how our brain has an extraordinary capacity to adapt and modify itself over the course of a lifetime in response to targeted exercises and stimuli.

This phenomenon, called brain plasticity, is a physical process that directly influences our cognitive and motor capabilities.

How does cognitive training work?

Cognitive training aims to maintain or improve an individual's cognitive skills by stimulating the brain.

Scientifically structured exercises are employed that focus on different cognitive areas, including:

- Attention
- Cognitive speed
- Memory
- Executive functions

These exercises not only improve general cognitive skills, but can also positively affect:

- Self-confidence
- Stress management
- Specific technical skills of a sport
- Motor skills



for more information:
training.microgate.it



Winning combination: Witty Sem and BrainHQ

The result of a profitable international partnership and inspired by the approach of the BrainHQ platform (the only brain training platform developed on the basis of 30 years of neuroscience research), the Microgate Witty Sem system was developed.

The “smart semaphores” enable performing specific cognitive exercises alongside the more classic responsiveness work.

The effectiveness of the exercises suggested by Witty Sem is based on important scientific evidence and it is confirmed to be a precious ally in boosting cognitive and motor skills as well as athletic performance.

Considering the features of the Witty Sem system, it is in fact possible to combine motor exercises with specific cognitive stimuli. This type of approach enables working in an innovative manner, with a positive influence on sports performance.

The results highlight that this type of training:

- Improves the ability to make swift and effective decisions under pressure: Cognitive-motor training, in fact, helps develop the ability to process information quickly and to select the most appropriate response based on the context.
- Increases reaction speed: cognitive-motor training improves the ability to react quickly to visual and auditory stimuli, to anticipate actions, develop strategies and seize every opportunity in the best way.
- Promotes adaptation to unforeseen situations: cognitive-motor training exposes players to unexpected variable situations, helping them develop cognitive flexibility and the ability to adapt to changes quickly.

Implementing cognitive-motor training

- Specific exercises: the exercises should be designed to simulate the typical situations of a competitive setting.
- Gradual and adaptive intensity of the exercises: As for physical exercises, also for cognitive exercises it is essential for them to be adapted to the capabilities and characteristics of the subject.
- Immediate feedback: providing immediate feedback on performance helps to reinforce the right behaviour and correct wrong behaviour.
- Integrating cognitive-motor training in a regular training routine: dedicating specific sessions and incorporating dual training elements in other technical and physical exercises.

With our instrumentation you can

- **Monitor progress:** constantly monitor progresses and results over time for continual optimisation.
- **Improve athletic performance:** precisely assess athletes' movement and abilities for gradual targeted improvement.
- **Identify shortcomings and adjust training:** rapidly detect muscular shortcomings and adjust the training programmes to maximise results.
- **Develop advanced training protocols:** customise and combine your motor and cognitive training.
- **Create motivation and inspiration:** motivate athletes through tangible feedback and create an environment of positive competition.
- **Improve communication:** share the data with your athletes and colleagues.
- **Assess post-injury rehabilitation:** assess and monitor recovery after injury, developing custom rehabilitation programmes.



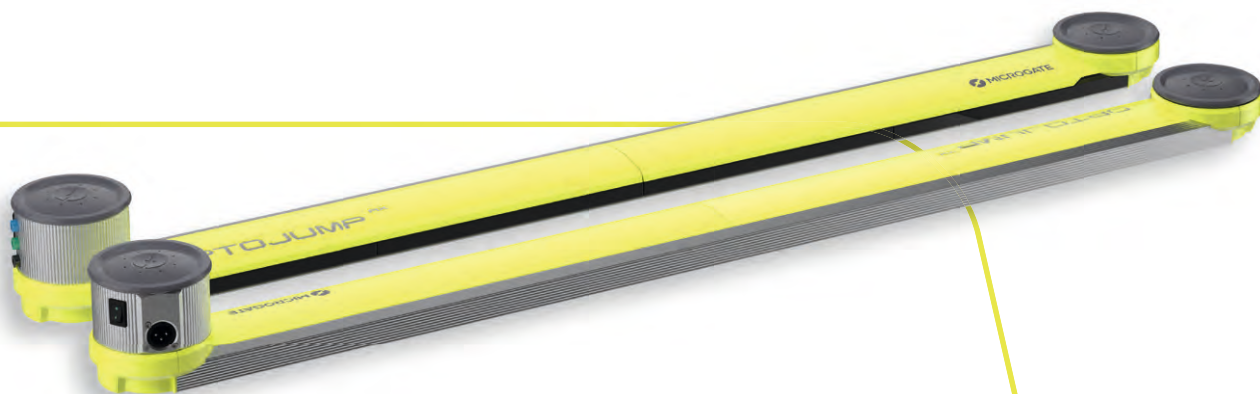


- **Make decisions based on data:** use objective assessments to take informed decisions in talent-scouting or in selecting athletes.
- **Make data access efficient:** simplify the work of athletic coaches and operators, easily accessing the data of past tests.
- **Build a reference database:** create a database of subjects and compare performances for objective analysis.
- **Report simply and automatically:** automatic reports that are easy to read at the end of tests, providing clear and comprehensible data.

OPTO JUMP NEXT

Drawing on 30 years of history, OptojumpNext is still acknowledged as one of the standards in motor assessments, especially on the field. Its great portability and fast use in every situation, together with the accuracy of the measured data, available in real time, make it one of a kind and highly appreciated in various settings and applications.

OptojumpNext enables evaluating different types of movements, from walking on the spot or tapping to any type of jump (vertical, long, side...), running and sprinting. With no need for any calibration, the system can be freely positioned either on the ground or on a treadmill and permits configurations up to 100 metres. The captured data are supplemented by 2 webcams that can be positioned as desired for qualitative support in the assessment.

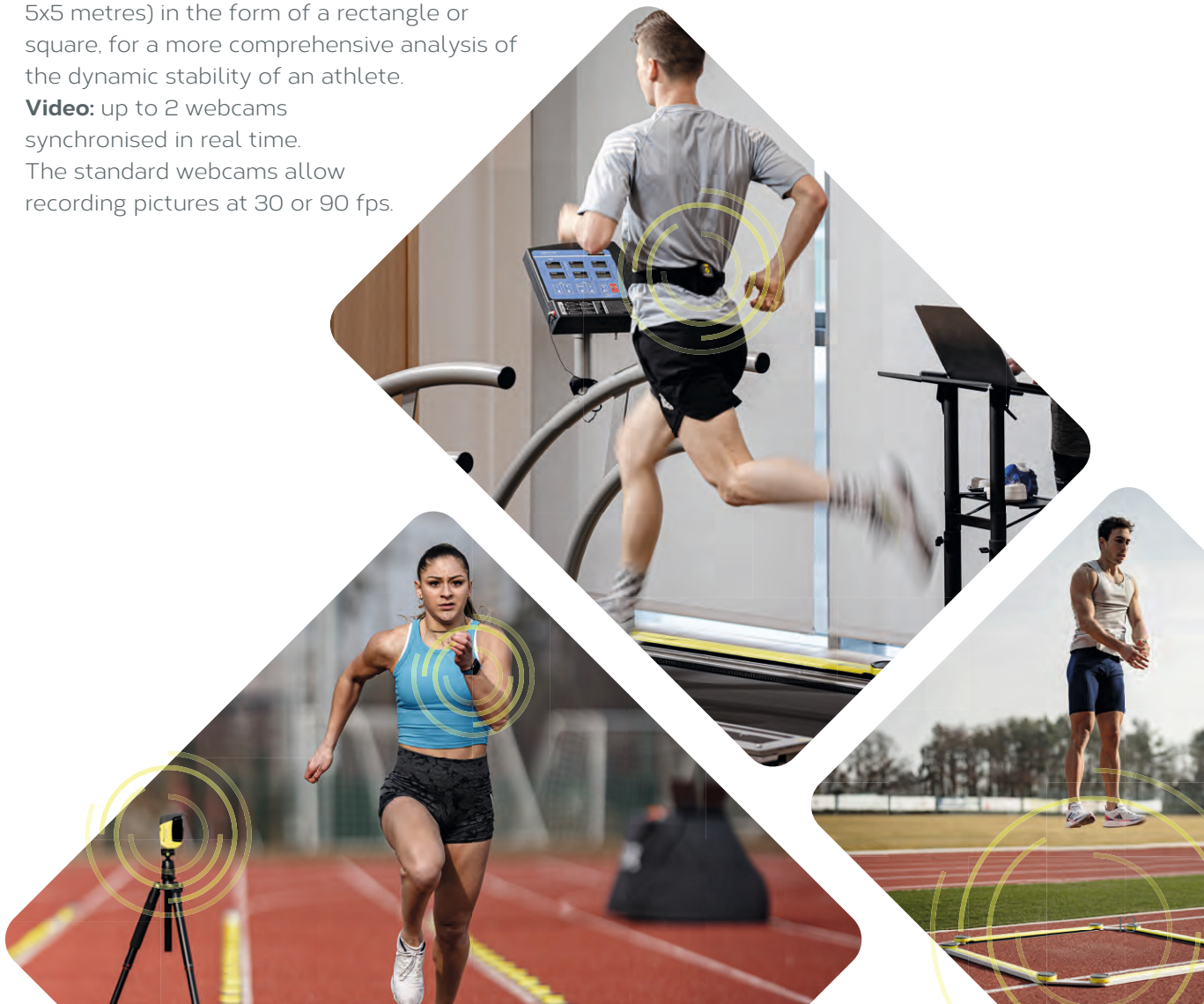


- Objective assessment in real time
- Easy opportunity for analysis and comparison
- Plug & Play: fast installation and no calibration
- Modular system/scalable from 1 to 100 meters
- Possibility of integrating with Witty
- Photocells and GykoPro inertial system

Hardware

OptojumpNext is a system for optical detection comprising a transmission bar and a reception bar. Each bar contains 96 LEDs that communicate on an infrared frequency. Once positioned on the floor, with the bars placed up to 6 metres apart from each other, the system precisely detects any interruption, identifying its duration and position. The capture time is one thousandth of a second with a space resolution of approximately 1 cm. Starting with these basic data, the dedicated software provides a series of parameters for the different types of movement.

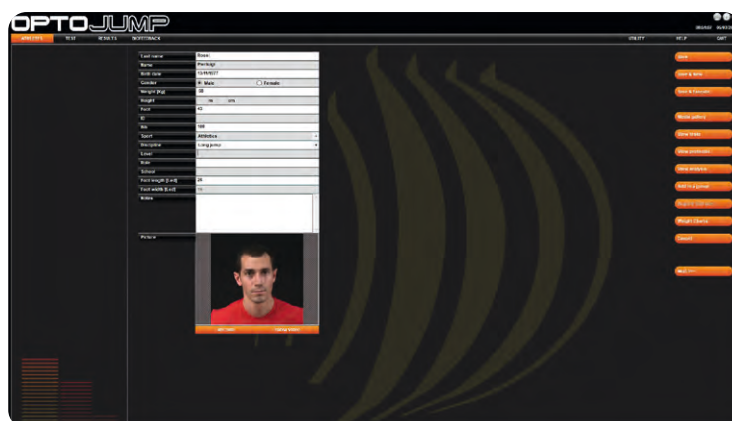
- **The single metre:** the single metre can be placed on any surface or on a treadmill. It can be battery powered or connected to the power supply.
- **The modular system:** the handy and simple assembly system that uses special interconnected plugs allows fast installation and the utmost flexibility for any configuration. The length ranges from a minimum of 2 metres up to a maximum of 100 metres.
- **The two-dimensional system:** a two-dimensional configuration (up to a maximum of 5x5 metres) in the form of a rectangle or square, for a more comprehensive analysis of the dynamic stability of an athlete.
- **Video:** up to 2 webcams synchronised in real time. The standard webcams allow recording pictures at 30 or 90 fps.



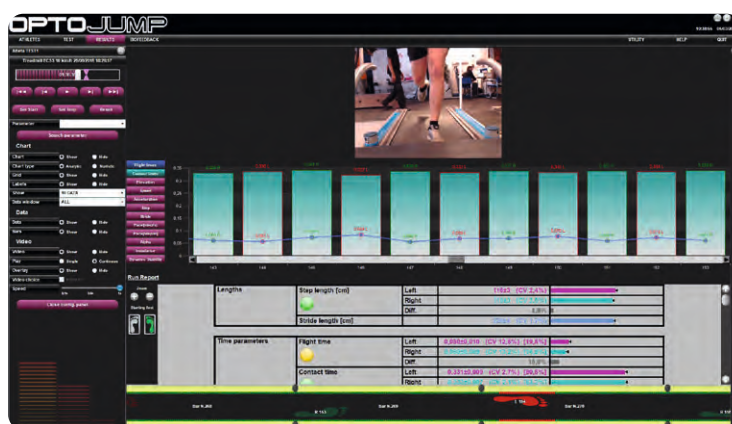
Software

The data and images recorded by OptojumpNext and by the Webcams are recorded and viewed in real time and in a synchronised manner in the dedicated software. The software has been designed to manage and analyse the data easily and quickly.

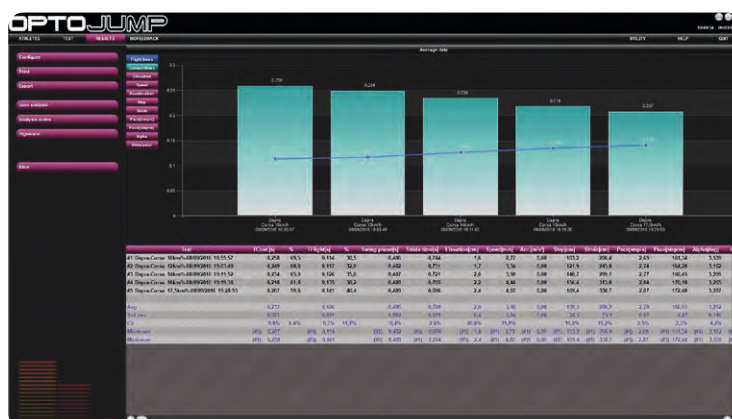
- **Athletes' personal data:** Athletes' personal data, with all the potentially useful details, can be imported from an external Excel file or be manually entered in the software. From here athletes can be grouped and sorted as needed into tree-structured groups to facilitate mass analysis of singles or groups, with no need to export the collected data for subsequent processing.



- **Tests:** On the basis of some predefined types, you can customise your tests for this purpose to make them suitable for your reality and in line with current and past activities. Obviously, the software contains a number of pre-configured tests based on the standards at the international level. Some of these tests are grouped into protocols that, once performed, permit accessing a unified easy-to-read report.



- **Results:** The results of the tests and protocols previously executed and saved can be recalled from a dedicated menu item. Here it is possible to analyse data and images in detail, comparing them, filtering them and grouping them according to need



All the tests can be exported both to Excel and in predefined PDF reports (whose header and footer are editable). The reports all present:

- an initial part called "info" that can be activated at the user's discretion, with a descriptive introduction of a few pages on the type of test performed and on relevant scientific publications;
- an initial summary page with the main parameters
- highlighted details on the following pages
- any data from the GykoPro sensor



for more information:
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Biofeedback

- **Video feedback:** Video feedback: work and training system active. Thanks to the Biofeedback function, in fact, the athlete can in real time view the parameters of their performance (usually on a second screen).
Through a simplified graphical interface, the user can define a specific target based on absolute values or asymmetries and the athlete will be called on to modify their motor strategies to correct these values bringing them within the defined thresholds and then optimise the movement. At the end of the training session, a pie chart shows the quality of the work performed.
- **Metronome:** a simple flag permits activating or deactivating the metronome, a sound stimulus to help direct the athlete's attention to the main movement by synchronising the movements with the beat of the rhythm.
The system also enables making your step audible by diversifying the right and left leg contacts with 2 tonalities.

GYKOPRO

GykoPro is an inertial system with latest-generation sensor technology, designed for motor and posture evaluations and for training. Today even more precise, lighter and more connected. The ideal instrument for physiotherapists and athletic coaches.

As for the previous model, we have opted to maintain modern components that have the best performance on the market. The sensors permit measuring accelerations of up to 16g and angular velocities of up to 2000°/s with a capture frequency of up to 800 Hz.

The weight and dimensions of the new device have been considerably reduced; the Pro version, in fact, weighing just 17 g distributed over 42x42x14mm, is an easily applied instrument also for evaluations on smaller areas such as feet, hands or head.

Thanks to the optimisation of its structure, the battery life is considerable increased to over 30 hours. re.

- Small, light and handy to wear
- Easy to use
- Easy management via Promove APP
- Automatically synchronised with OptojumpNext



for more information:
training.microgate.it

With GykoPro you can:

- **Measure articular flexibility**, for improving training.
- **Evaluate balance** to understand physical stability.
- **Evaluate the muscle profile** with force-speed-power graphs.
- **Monitor the pathways** for rehabilitation and training.
- **Integrate OptojumpNext data** for more comprehensive analysis.
- **Perform and monitor exercises** in real time with biofeedback.

All the measured data are saved and can be used at any time for detailed analysis and monitoring.

The small compact bag includes a set of bands and supports, designed for every type of application.

The Kit includes bands of four different sizes, a bib, a magnetic support and a rubber support for fastening to a barbell.



PRO MOVE APP

GYKO PRO

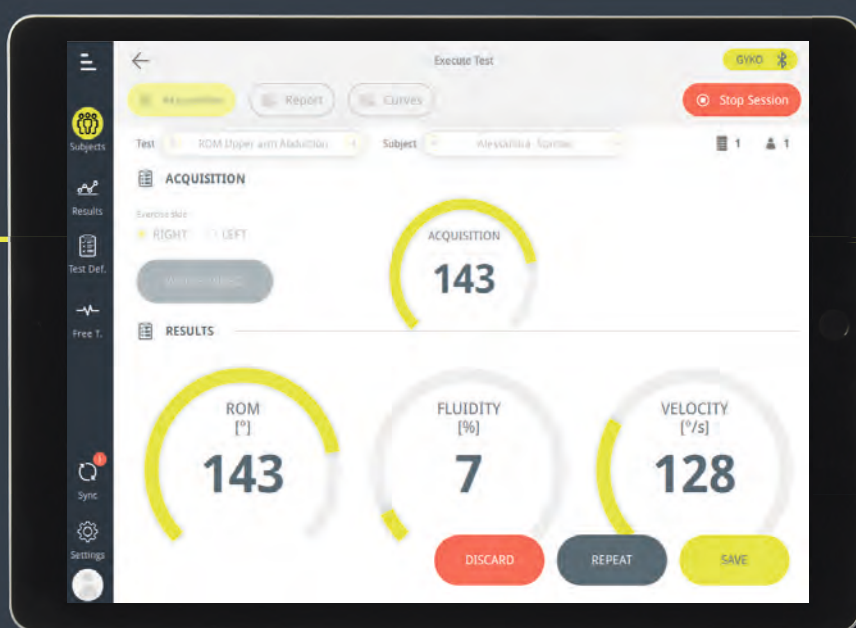
Thanks to an important work of research & development, using a dedicated robot and 3D video systems in our laboratory, we have updated and optimised the calculation algorithms making them leaner and faster. Now, with a simple click on your smartphone or tablet, you can access the GykoPro system measurements.



PRO MOVE

With a single device and without having to activate different modules or licences, the user can objectively evaluate their athlete, starting with the articular mobility of each district, passing through the ability to manage balance and posture and on to detailed analysis of the expressions of force during tests with overloads.

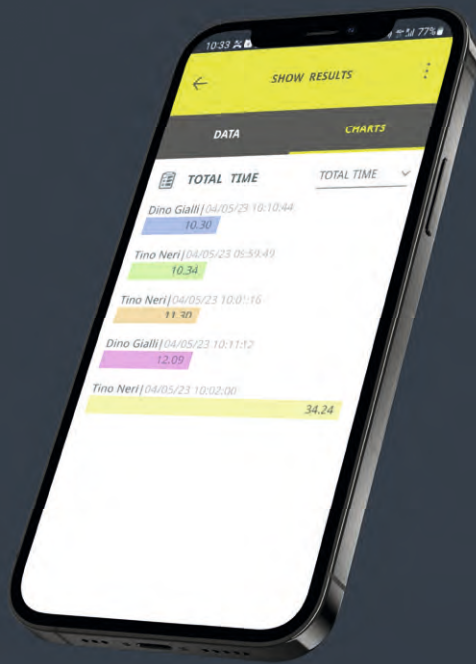
The data are automatically recorded inside the APP and once saved they can be analysed in detail from both a numerical and graphical point of view.



All the data can be exported, shared by means of an Excel file and printed out in dedicated reports.

The app's graphical interface is simple and user-friendly, designed to allow fast use even by less expert trainers, as well as to offer a clear and detailed analysis of the data collected.

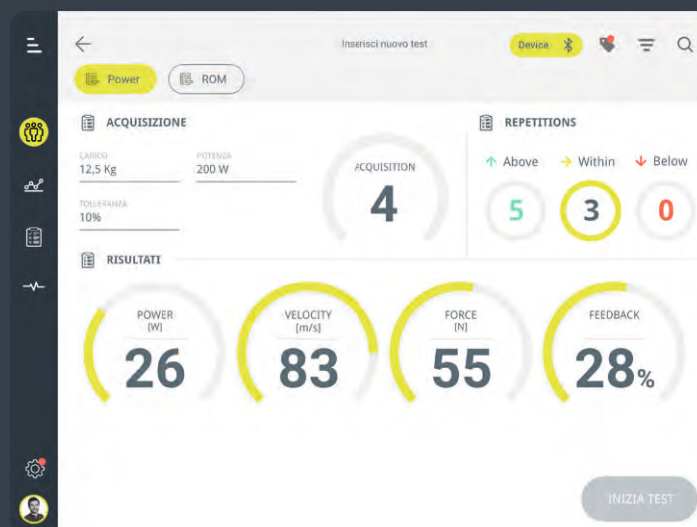
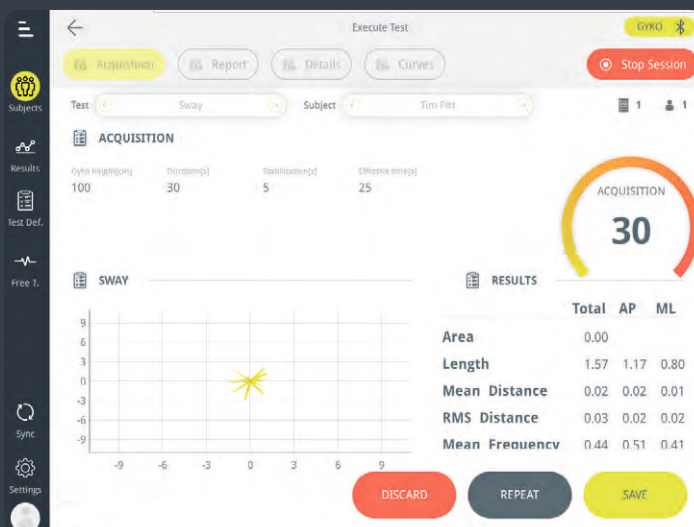
The communication structure used in the app transforms it into an information manager, ensuring high precision and top performance.



Download the app

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Download on the
App Store



WITTYPRO TIMING FAMILY

Its extreme simplicity and flexibility coupled with its remarkable reliability means that the WittyPro system presents itself as one of the most commonly used timing products in sports training. The WittyPro Gate photocell can be freely configured as a single or dual beam and can be combined with a WittyPro Sem for activities related to the world of agility. The entire system can be managed via the dedicated app, called ProMove, available for both iOS and Android devices, or via WittyPro Timer.

This stopwatch has been conceived and developed in a strong and safe manner in order to work confidently on the field, regardless of factors such as the light, rain or other environmental conditions. All the data collected can later be analysed by using the dedicated software. In addition, the system can be used on 8 different radio channels, making it possible to work simultaneously on different stations with no risk of interference. With WittyPro, timing and monitoring sports training become easier and more efficient than ever.



Types of tests and work available:

- Single linear time trials of any type with an unlimited number of split times
- Trials for multiple athletes on the same circuit (up to 3 athletes on the circuit)
- Simultaneous parallel trials on 2 circuits
- Trials with predefined recovery times
- Change of direction trials with coloured arrows
- Tests of reaction to coloured and complex luminous visual stimuli
- Scientifically validated cognitive works on speed of processing information, attention, split attention, memory, suppression of distractors



for more information:
training.microgate.it



WITTYPRO GATE

With a consolidated presence on the market of over ten years, the Witty Gate photocell is the state of the art for the measurement of dry training times.

Its versatility, ease of use and sturdiness make it the ideal instrument for carrying out time trials on the field. The system can be configured with an unlimited number of photocells to perform linear, go & return or multiple lap exercises. With WittyPro Timer or the ProMove APP it is possible to manage different types of completely customisable tests. The WittyPro Tab display board moreover permits directly connecting to the photocells and taking advantage of the various predefined programmes. The photocell can be used in either single or dual mode by simply connecting two devices with a cable. Each photocell is equipped with a built-in radio module with a range of 150 metres, as well as a Bluetooth module for communicating with a smartphone or tablet, if using the dedicated App. The redundant radio transmission that ensures the utmost precision in managing acquired events (± 0.4 thousandths of a second) benefits from Microgate's huge experience in the professional timing sector (over 30 years of history).

Each photocell is equipped with a Bluetooth connection enabling direct management via the app, a USB port for charging or communicating with a PC and a jack port for importing and exporting triggers.

Ultimately, the Witty Gate photocell is a reliable and advanced companion for professional timing, derived from Microgate's vast expertise in the sector.

- **reliable**
- **flexible**
- **wireless**



WITTYPRO TAB

The WittyPro Tab display board has been designed and developed to enrich the experience of sports training simply and effectively, focussing on the greatest portability.

Immediate display of results and stimulation of athletes, all done wirelessly. The opportunity of viewing the results of time trials in real time gives athletes an immediate awareness of their performance, generating a natural competitive spirit both with themselves and with other participants, driving them to do their best.

The display board is equipped with an internal stopwatch that includes a number of programmes, which can be called up with 2 buttons on the side, to exploit the different devices in the Witty family to the full potential, be they photocells or semaphores, to which it is automatically connected by radio.

Its compact design measuring 13 x 42 x 6 cm, limited weight of approx. 3kg, battery operating time of over 8 hours with the possibility of connecting to an external power supply and the automatic LED brightness adjustment make it the finest instrument on the market for outdoor use.

→ **lightweight**

→ **easy to transport and install**

→ **wireless**



WITTYPRO TIMER

WittyPro Timer is the ideal instrument that accompanies the trainer in their daily work.

Especially on the field, it is possible to appreciate the advantages offered by this device, avoiding the typical awkward situations that can arise when using a smartphone or tablet. The visibility of the screen under various conditions of brightness and the duration of the battery outdoors enhances its operational characteristics.

The compact size and ergonomic shape of Witty Timer make it handy and practical to use. The multilingual interface is similar to modern apps, with icons guiding the user toward fast learning and immediate use of all the features. WittyPro Timer is equipped with the radio module of the Witty family, which allows receiving pulses up to a distance of 150 metres and on 8 different channels.

As with the other devices in the Witty line, also the stopwatch has a USB port that enables connecting to a PC or charging and a jack port that is useful for recording external triggers.

Ultimately, WittyPro Timer is an essential instrument for a trainer, providing ease of use, versatility and reliability in a single device, optimised for the sports environment.

- **luminous display for outdoors**
- **ergonomic design**
- **radio transmission**
- **easy to use**



WITTYPRO RFID

Witty RFID has been created with the aim of optimising and considerably simplifying the work of an athletic coach, eliminating the need for any manual action on the stopwatch.

The RFID system is an automatic athlete recognition system composed of an RFID reader and an identification bracelet paired with each athlete. Witty RFID has been created with the aim of optimising and considerably simplifying the work of an athletic coach, eliminating the need for any manual action on the stopwatch. This solution is particularly appreciated by our customers, above all in settings where there are multiple measuring stations.

Indeed, all Microgate products support this identification: whenever an athlete moves their bracelet near to the RFID reader, they are automatically recognised and their data are transmitted via radio to the stopwatch, to the ProMove App or by cable to the OptojumpNext software. The bracelets are made of washable silicone rubber, ensuring practical use and cleanliness.

- **Automatic recognition**
- **Easy management**
- **Ideal for evaluating many athletes**
- **Integrated with all Microgate systems**



WITTYPRO SEM

An extraordinarily simple and flexible system, WittyPro Sem is not only useful for training reactivity and agility, but also offers the possibility of stimulating basic cognitive functions through well-planned exercises.

It is a kind of gym that makes it possible to combine physical training with specific cognitive loads.

WittyPro Sem is a "smart semaphore" that consists of a 7x5 multicolour LED matrix, capable of managing symbols (such as letters, numbers, arrows) and different colours (blue, red and green). The semaphore is equipped with a proximity sensor, which means you only need to pass a hand in front of the sensitive field to be immediately recognised.





WittyPro Sem semaphores can be used in both stand-alone mode and in combination with photocells and other products in the Witty family. Thanks to their great flexibility and simplicity of use, they are the ideal instrument for a vast range of work requirements, both in the setting of physical training and in rehabilitation and motor education.

- **scientifically validated cognitive exercises**
- **easy to configure**
- **can manage symbols and colours**



The system can be used in different ways:

- In combination with photocells, as a start semaphore with or without a countdown, to manage starts.
- With or without photocells, as a visual stimulus to indicate the change in direction: the arrows of different colours can be used to combine movements and bursts.
- To carry out tests of agility and reaction with various levels of difficulty.
- In Cognitive work.

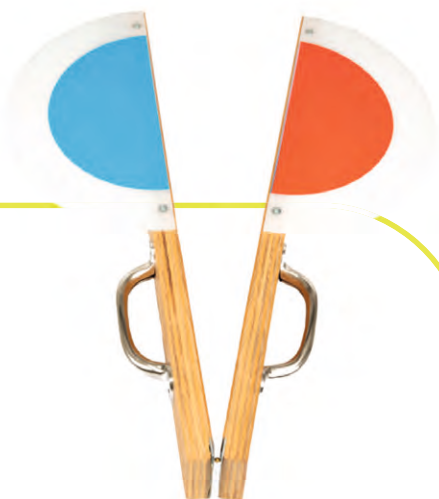
WITTYPRO

ACCESSORI

Each device in the WittyPro family has an external input (3.5mm jack) that can be used to record any kind of pulse (open/closed) from the outside. For managing the start phase in different sports there are the following solutions:

→ **Starting Pistol:**

An electronic pistol that reproduces 3 types of sound (bang, whistle and siren) and a luminous flash, if activated, to view the signal. This system is equipped with a portable loudspeaker that has its own microphone. For impulse recording, the pistol is connected to Witty (timer, photocell, ...) via the dedicated cable.

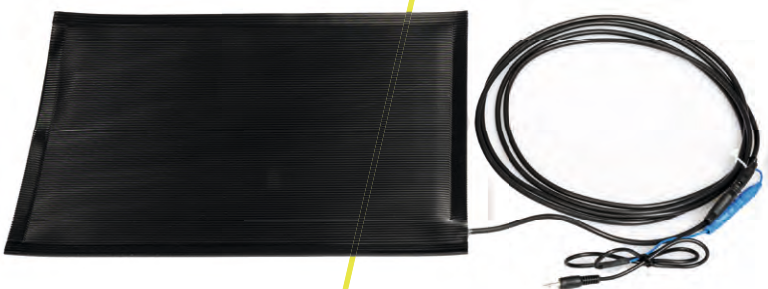
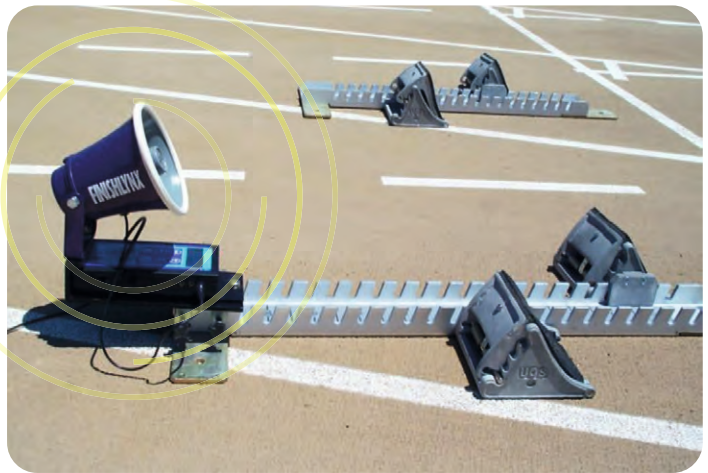


→ **Starting Clapper:**

These are two pieces of wood that are connected with a hinge, and attached to the ends is a so-called viewing area, a coloured semicircle. The two halves are then beaten together as a start signal and the built-in vibration sensor records the vibration, converting it into a start impulse, which is sent to Witty (photocell, timer, etc.) via the special cable.

→ **Reactime FinishLynx system:**

This is effectively a false start system – it is the training version of one of the systems most widely used in IAAF competitions. The system is hooked up with the starting blocks and consists of a motion sensor, a speaker and an LCD interface. By connecting it to the Witty timer, the athlete's reaction times are obtained as well as the start impulse.



→ **Start Pad**

A pressure sensitive contact pad for detecting the start of the trial when doing tests and training. It can be connected with all the products in the Witty family via the jack connector. A useful instrument in all those situations where the athlete's direction, changing each time, does not allow using a photocell for detecting the start.

PRO MOVE APP

WITTY PRO

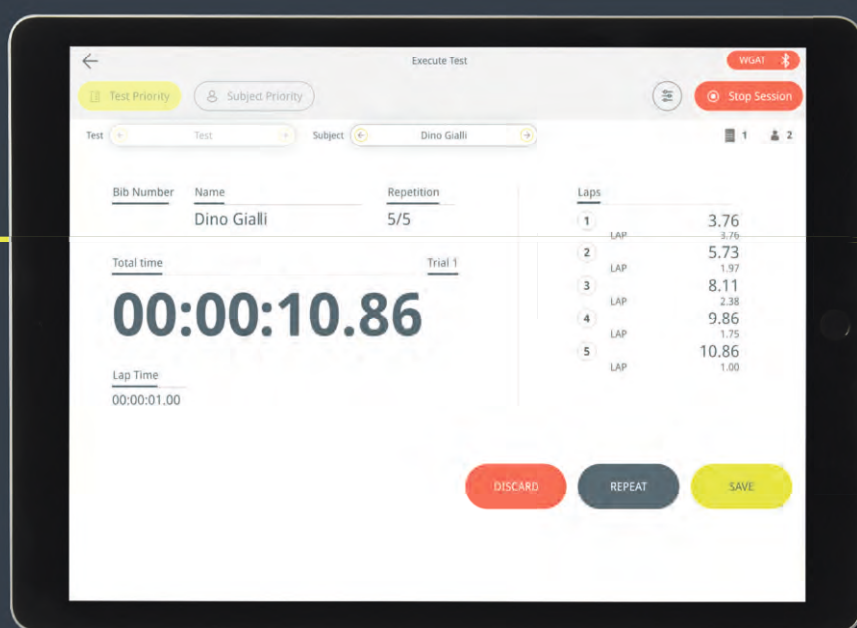
To make the coach's job easier and facilitate data sharing and analysis, the entire new WittyPro line can be used with a smartphone or tablet thanks to the dedicated ProMove app. The application is available for Windows, Android and iOS operating systems. After downloading the App and registering your account, simply connect one of the nearby WittyPro devices by Bluetooth to then perform all the different types of tests and work available.



PRO MOVE

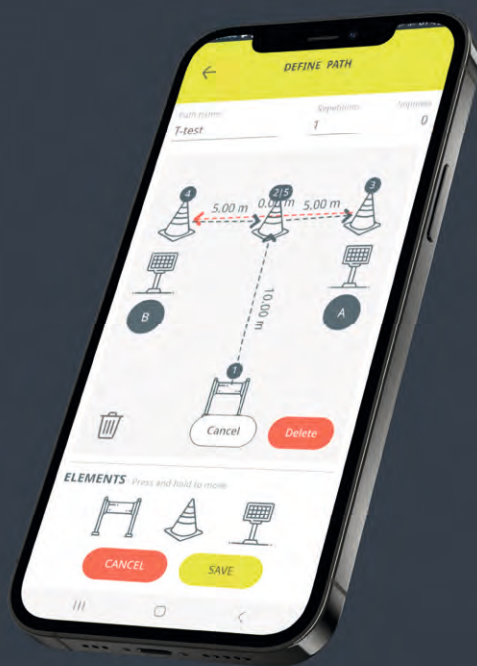
You can create different types of sprints and change of direction tests by using WittyPro Gate devices, and it is possible to work on reaction, agility and the cognitive-motor scope by using WittyPro Sem semaphores. It is also possible to connect to just WittyPro Timer to upload or download data such as athletes' personal data, test definitions and results.

The data are automatically recorded inside the APP and once saved they can be analysed in detail from both a numerical and graphical point of view.



All the data can be exported, shared by means of an Excel file and printed out in dedicated reports.

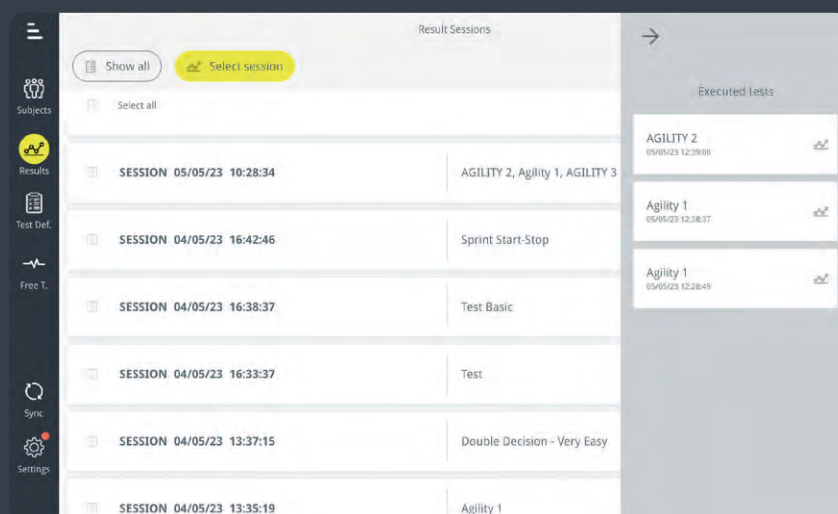
The app's graphical interface is simple and user-friendly, designed to allow fast use even by less expert trainers, as well as to offer a clear and detailed analysis of the data collected. The communication structure used in the app transforms it into an information manager, ensuring high precision and top performance.



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Over 3000 scientific
publications talk about
us

Contact the specialist consultant:
training.microgate.it

**Your portable laboratory for evaluating and
training sports performance.
Made in Italy, since 1989.**

Evaluate and train the motor, physical and cognitive capacities of your athletes intuitively and quickly, when and where you want: this is the fundamental concept at the base of Microgate Training&Sport products. With their innovative technology and versatility of use, Microgate products enable optimising athlete training in any setting, ensuring excellent results.



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