



## Acquisition of sensor signals and videos

**Ivan** is a software designed to acquire, present and analyse data coming from various sensors simultaneously and synchronously with multiple video sources (up to 4, up to **1000 Im/sec** depending on the format). First software of this kind, it suits to many needs of health's practitioners, scientists and searchers, by giving them a way to compare objective data (**EMG, forces, pressures, ...**) to subjective observations resulting of the viewing of video. This concept presents as many more interests as the phenomenon to study is complex: human experiments in the fields of health, sport and ergonomics, but also in some industrial applications. The latest technologies of Microsoft (.Net, C#) were used to develop **Ivan**; this makes easier all evolutions to the benefit of the user and guaranties its compatibility for the current and future versions of Windows.

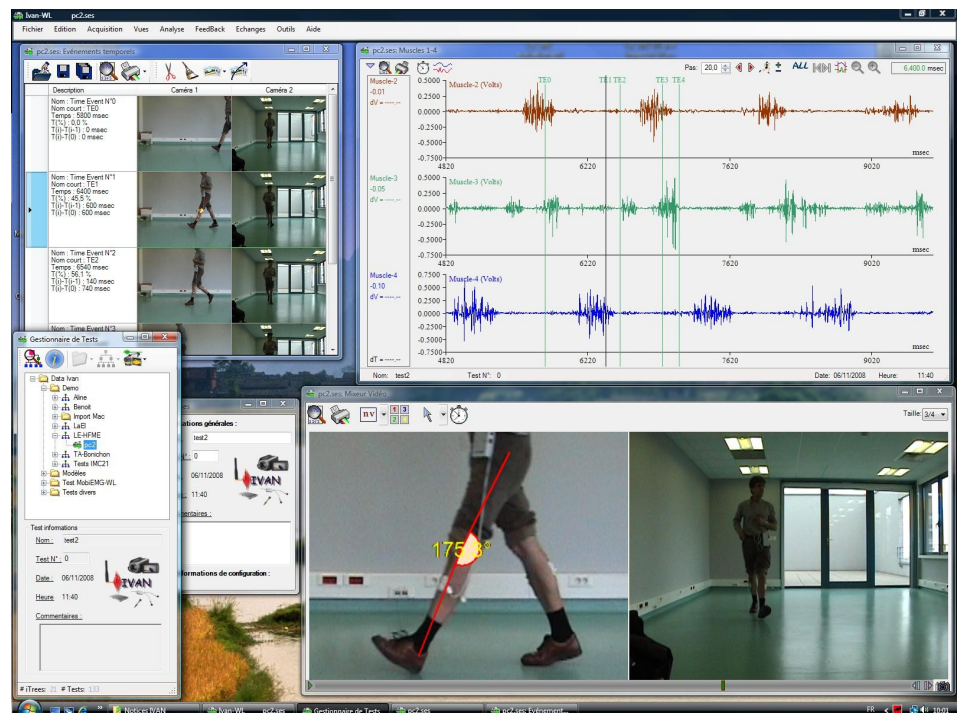
### A complete and easy to use software

Thanks to its modern interface, **Ivan** is user-friendly, easy to use and to learn. In particular, it integrates a tests manager that hides the complexity of the underlying system of files and an online help that brings an answer to any user question.

This usability was not obtained to the detriment of the power and of the adaptability of the software. Indeed, **Ivan** can be easily configured. Few clicks are sufficient to redefine the Analog/Digital channels to scan and the number of videos to capture.

**Ivan** also incorporates a **feedback** system which is extremely flexible and which gives to the user the possibility to create himself, like with a drawing software, any feedback pages that he

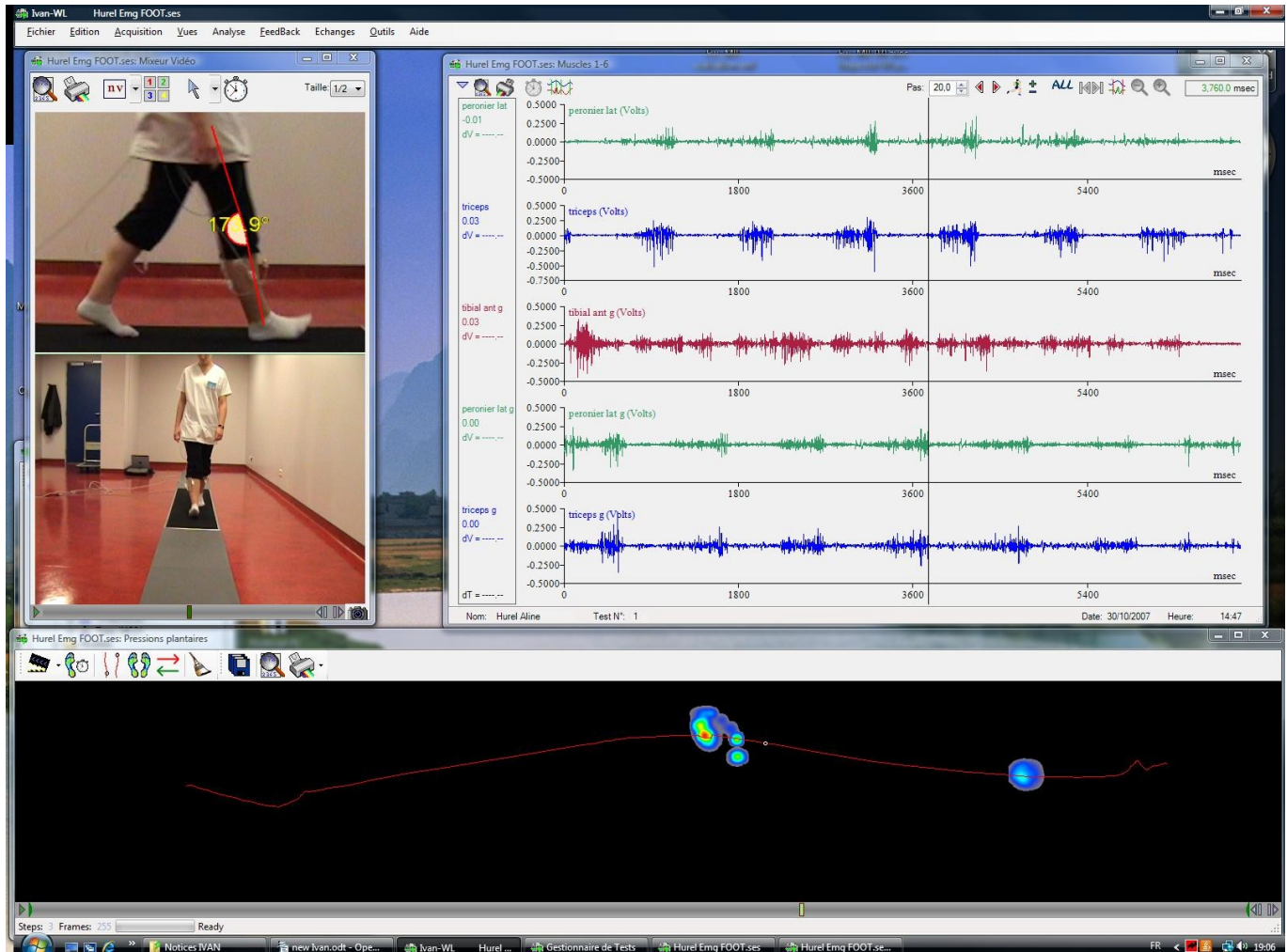
wants. These **feedback** pages can contain oscillograms, bargraphs, dials needle, numerical displays and, of course, videos. This way, it is easy to control signals variations in real time. This feedback process can also be used to present to the patients some informations during the experimentsn.



Screen generated by IVAN

Acquired data can now be processed and/or displayed on some graphics of different types ( $y=f(\text{temps})$ ,  $y=f(x)$ ,...) and the videos in parallel. Cursors handled by the user allow to point a precise moment on the graphics and the videos, Ivan guaranteeing permanently the correspondance between the displayed images and the moment pointed on the graphics. **Ivan** also integrates tools to analyse videos that allow to zoom in and out, to make 2D measures on static images (angles, distances).

**Ivan** is an open software containing many possibilities of impression, of data export and import under various forms. It can also import 3D data supplied by motion capture systems like **SAGA-3<sup>RT</sup>**, and by plantar pressures measurement systems (**footscan**). External modules could easily be written (using Matlab, Excel, C/C++, .Net, ...) so that to increase the processing capabilities. These multiple techniques of data exchange constitute an efficient way to extend with no limits the possibilities of Ivan and to answer to the demands of each user.



## A large choice of sensors

- Multicomponent force plates (Amti, Giat, Kistler, Sensix, ...)
- Pre-amplified EMG surface sensors
- Electrogoniometers, forces sensors, Accelerometers,...
- Footswitches
- easy adaptation to any other sensor

## Supported materials

- 64 bits native version for Windows 7 and 32 bits for 7/Vista/XP
- **MobiEMG-WL** (Bluetooth, 16 channels 2KHz, range ~100m)
- A/D acquisition modules from National Instruments (USB, PCI, wifi)
- 1 to 4 Basler GigE cameras or miniDV camcorders (FireWire/IEEE-1394) or WebCam