

REF **SWAY REFERENCED VISION**

CE Class I Medical Device

User manual

Distribution mode

Available for direct download at
<http://virtualisvr.com/espace-client/>
Use under licence

 **VIRTUALIS**

Avenue de l'Europe - 34830 CLAPIERS - Tel. 09 80 80 92 91

DESCRIPTION

SWAY-REFERENCED VISION software is an immersive 3D simulation based on virtual reality technology, i.e. it allows a person to be immersed in an artificial digitally created world. **Sway-Referenced Vision** is a software used to reduce the weight of visual input when working on unstable ground.

INDICATIONS

Rehabilitation of visual dependence (PPPD, landing sickness, scrolling syndrome)

CONTRAINDICATIONS

Epileptic patients, children under 15 years of age, pregnant women

FOR USE BY

Healthcare professionals: Physiotherapists; Occupational therapists; Neuropsychologists; ENT doctors; Neurologists; PMR doctors (physical medicine and rehabilitation), etc.

Research Centers: CNRS, CHU, INSERM, etc.

WARNINGS AND CAUTIONS

During sessions, stay close to the patient in order to anticipate any loss of balance or discomfort caused by the use of virtual reality.

Define a working area of about 3m² to allow for risk-free movements.

Take a 10 to 15 minute break every 30 minutes of use.

Potential adverse effects are those due to the use of Virtual Reality, namely vomiting, malaise, dizziness, syncope.

The accessories required to use the software may emit radio waves that can interfere with the operation of nearby electronic devices. If you have a pacemaker or other implanted medical device, do not use the product until you have taken advice from your doctor or the manufacturer of your medical device.



Any serious incident should be notified in writing to qualite@virtualisvr.com



Table of Contents

- 1. GENERAL..... 4
 - 1.1. Advice for use..... 4
 - 1.2. Hardware and minimum configuration requirements..... 4
- 2. USE OF PATIENT MANAGEMENT..... 5
- 3. COUPLED VISION 7
 - 3.1. Start interface..... 7
 - 3.2. Module field of application 8
 - 3.3. Installing the patient 8
 - 3.4. Session settings 8
 - 3.5. Shortcuts 9



1. GENERAL

1.1. Advice for use

Virtual Reality Immersion is a powerful tool, especially for optokinetic stimulation, optical flow, motorway simulations, dynamic SVV etc.

These stimulations have the potential to cause certain disorders: Vasovagal syncope, epileptic seizures, migraines, etc. (Despite a test phase on more than 2000 patients. Similarly to previous generation optokinetics, caution is required)

This type of re-education must be undertaken progressively, especially in Virtual Reality where the stimulation is much more "powerful" than the traditional optokinetic stimulators.

The contraindications are identical: Mainly epilepsy and migraines.

As postural reactions can be spectacular, it is VERY STRONGLY advised to place patients in a safe environment and to stay close to them throughout the session.

It is also recommended to increase the duration and intensity of the stimulation very gradually, after an initial short session to make sure of patients' tolerance to this type of stimulation.

Virtualis declines any liability for any disorders suffered by patients during or after use of its software.

1.2. Hardware and minimum configuration requirements

Hardware required to use the system:

- VR Ready PC
- VR System: HTC VIVE, HTC VIVE Pro or compatible system
- Lighthouse bases (HTC VIVE tracking)
- HTC VIVE Controller
- Thrustmaster T150 Wheel and pedals
- XBOX 360 Controllers
- USB HUB

In order to install and use our virtual reality applications, we recommend a configuration equal to or higher than the system requirements:



Technical Minimum Requirements

GPU

NVIDIA: Gen9 GTX 970 / Gen10 GTX 1060
 AMD Radeon: R9 290 / RW 480 / Vega 56

CPU

Intel: I5 4590
 AMD: FX 8350 / Ryzen 1400

Operating System

Windows 7 SP1

RAM

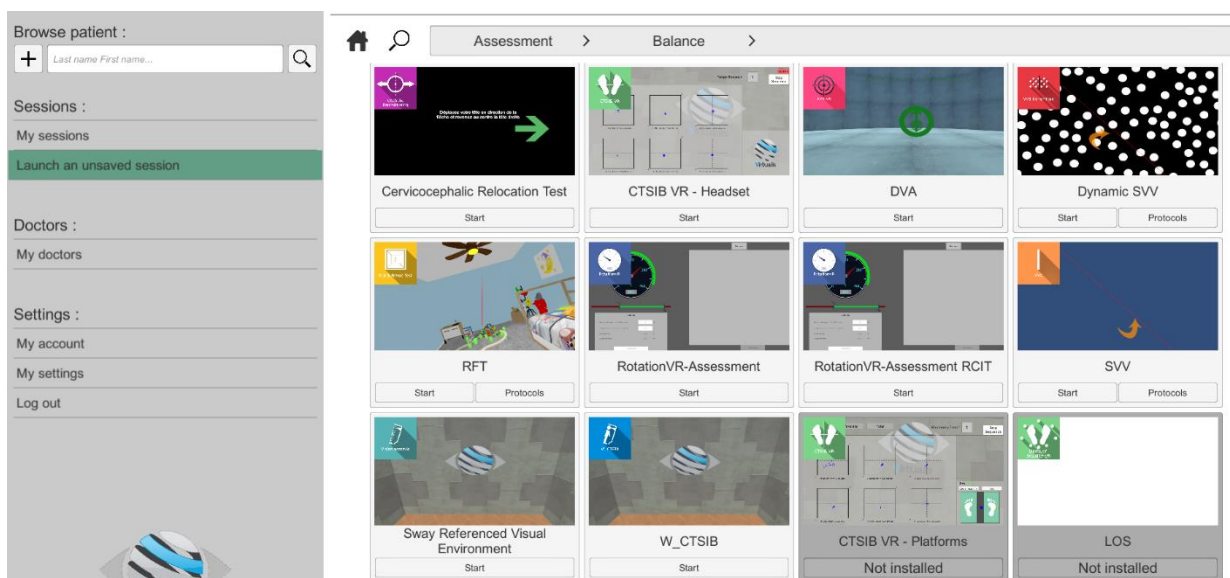
8 Go

2. USE OF PATIENT MANAGEMENT

Once connected to the Patient Management software, you arrive on the home page. It is from this home page that you will be able to start your VR software, split into different modules, as well as the other Patient Management functions.

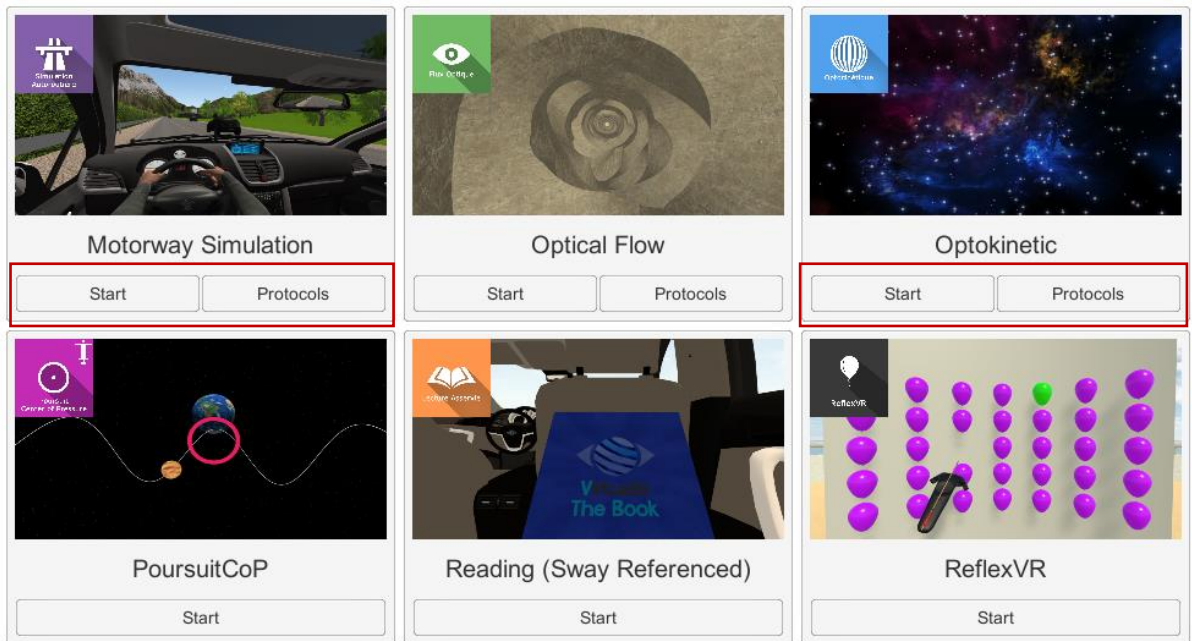
The software can be grouped according to criteria such as "Assessment" or "Re-education" and then by pathology type: Neurology, Balance, Functional or Kinetosis.

You can launch or switch from one software to another from the home page by clicking the corresponding "Start" or "Protocols" button.

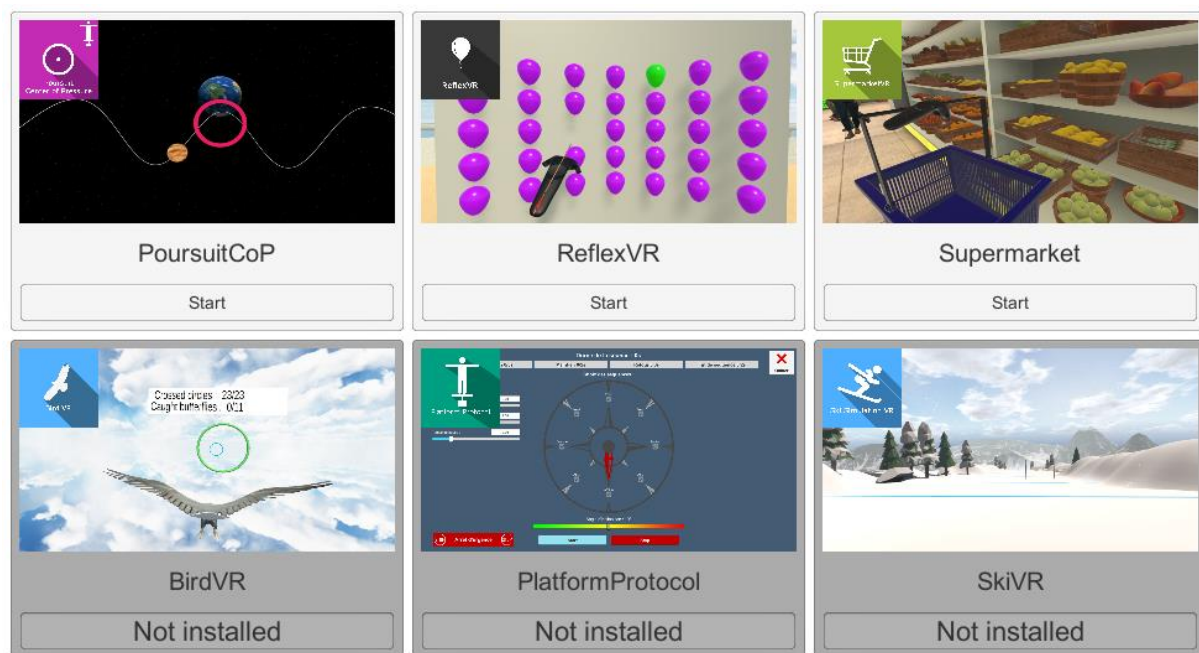


Some software can be started either in **manual mode**, by directly clicking the "Start" button, or in **protocol mode** by clicking the "Protocols" button.

The **manual mode** allows users to choose the settings for each environment. The **protocol mode** offers several sessions with different difficulty levels to test and gradually accustom patients to the VR environment.



Software that is not part of your subscription package is greyed out. If you want to use it, please contact our sales department.



3. COUPLED VISION

3.1. Start interface

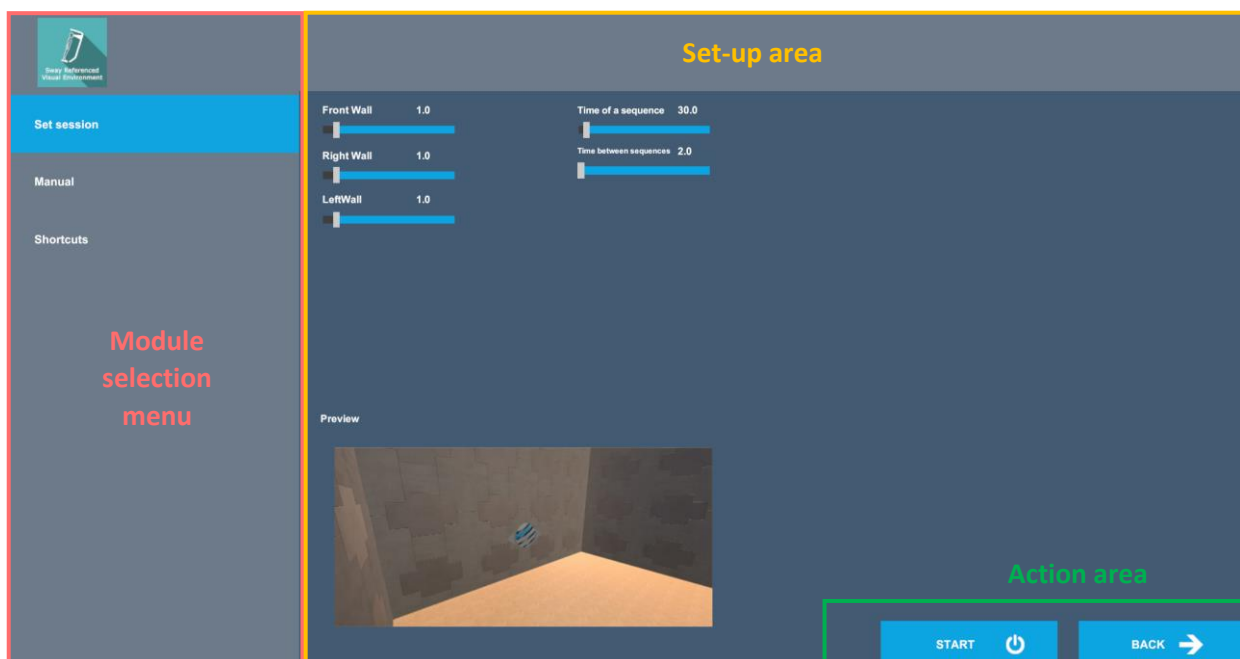


When starting the software in **manual mode** ("Start" button) from Patient Management, the software is opened in a start interface consisting of a module selection menu on the left, a set up area on the right, and an action area at the bottom right.

Depending on the module selected in the left menu, the set up area shows the various possible settings/information.

The general Patient Management menu can be accessed from the start interface by simply clicking the "Back" button located in the action area, or by pressing the "escape" key on the keyboard.

The module is launched by simply clicking the "start" button in the action area.



Once this button is pressed, the module starts by taking into account the specified settings. You also have the possibility to modify some settings when the module has been launched, using the keyboard.

The Start/Quit buttons allow the environment to be played back or stopped entirely to adapt the experience to the patient's sensations.

3.2. Module field of application

The purpose is to reproduce Sensory Organization Test conditions using a virtual booth that can be coupled to head movements, for conditions 3 and 6 (see section 9.3.).

A block of shape memory foam (type Airex) is required for conditions 4, 5 and 6 (see section 9.3.).

Allows to carry out a CTSIB in ideal conditions.

3.3. Installing the patient

Patient standing on stable floor or a foam block. The use of force plates is also possible.

Mask in front of the eyes.

Six possible sequences:

- Sequence 1: Stable Plane / Eyes Open
- Sequence 2: Stable Plane / Eyes Closed
- Sequence 3: Stable Plane / Coupled Vision ("T" key or "A" button)

Same installation on foam block

- Sequence 4: Coupled plane / Eyes Open
- Sequence 5: Coupled plane / Eyes Closed
- Sequence 6: Coupled plane / Coupled Vision ("T" key or "A" button)

3.4. Session settings

This module requires the tracking camera supplied with the mask.

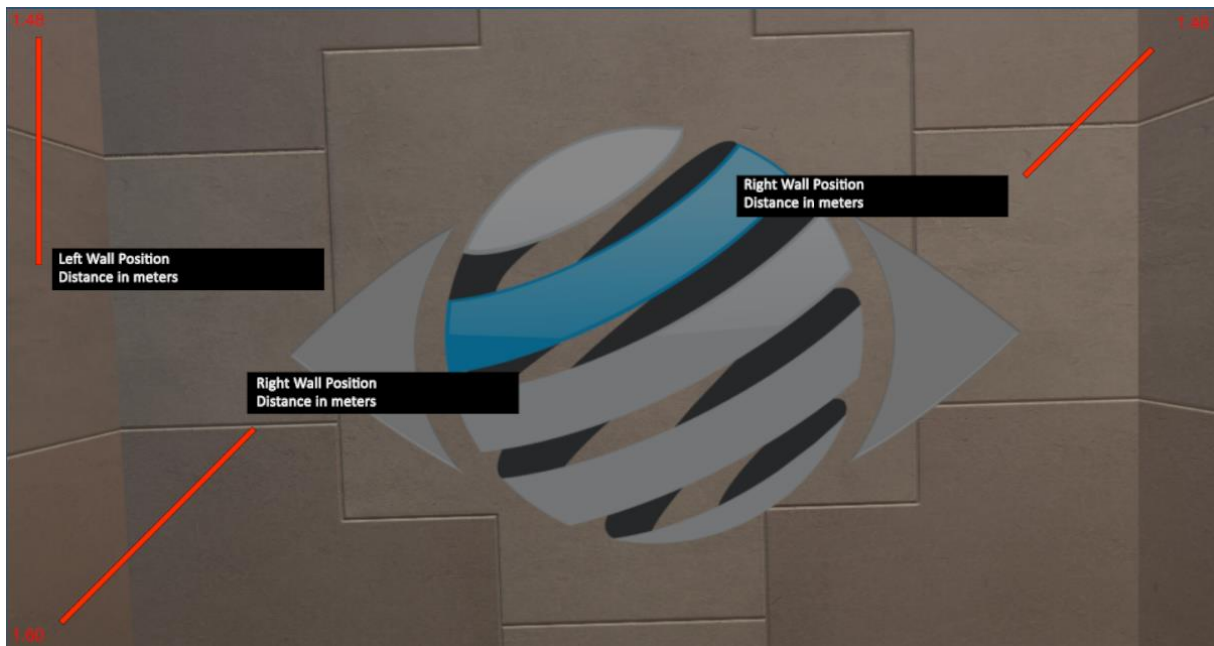
The booth size can be set using the keyboard (see Shortcuts) once the simulation has started.

The variable settings for this module are as follows:

Sequence duration: can be modulated by directly entering the required value

Height of the person: automatically detected by the head set

It is also possible to repeat a sequence by choosing the number corresponding to the required sequence from the drop-down menu.



3.5. Shortcuts

Keyboard or joystick shortcuts can be accessed in two ways:

- on the "Shortcuts" tab available at the launch interface level
- in the module, by clicking on the joystick icon in the top right corner of the screen

