



**REF**

**BOWVR**

**CE** Class I Medical Device

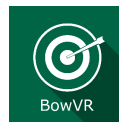
# User manual

## Distribution mode

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

 **VIRTUALIS**

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## DESCRIPTION

**BOWVR** software is an immersive 3D simulation based on virtual reality technology which allows a person to be immersed in an artificial digitally created world. **BowVR** is functional rehabilitation software for the Upper limbs, Shoulders and Spine that simulates archery. The software allows the functional exploration of the visual field with appropriate gestural response through a fun activity with programmed levels of difficulty, allowing to increase the field of visual exploration and the adequacy and speed of the gestures

## INDICATIONS

Functional re-education of the Upper Limbs, Shoulders and Spine.

## CONTRAINDICATIONS

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

## FOR USE BY

Healthcare professionals: Physiotherapists; Ergotherapists; 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 3m<sup>2</sup> 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.

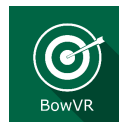


*Any serious incident should be notified in writing to [qualite@virtualisvr.com](mailto:qualite@virtualisvr.com)*



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## 1. GENERAL

### 1.1. Advice for use

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.

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)

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)
- XBOX 360 Controllers
- HTC VIVE Controllers
- HTC VIVE Trackers
- 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

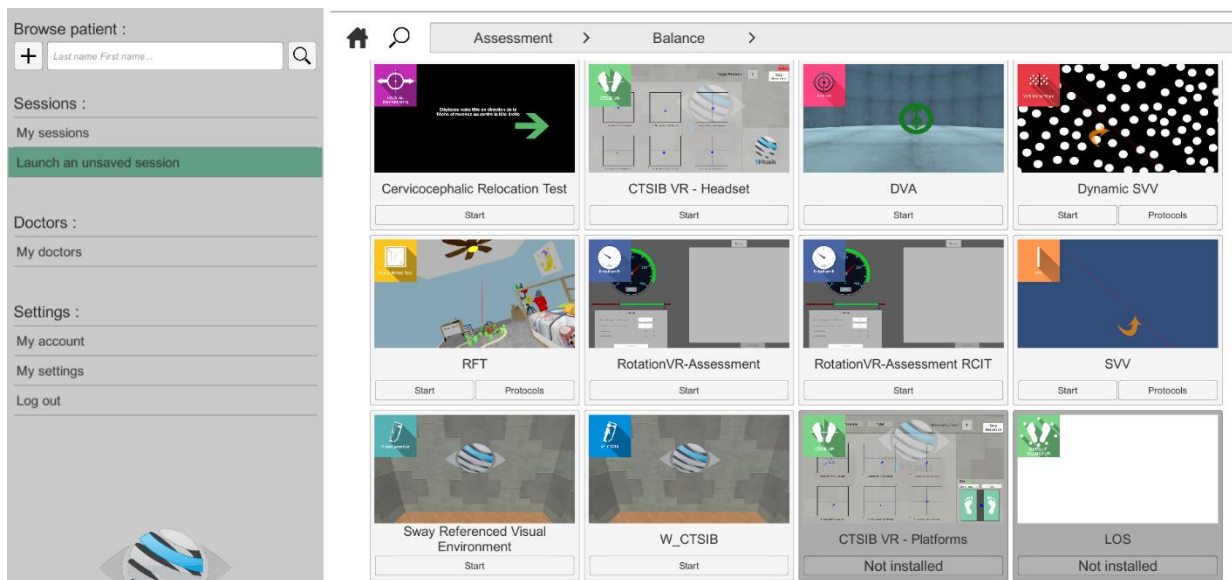
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## 2. USE OF PATIENT MANAGEMENT

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 as well as the other Patient Management functions.

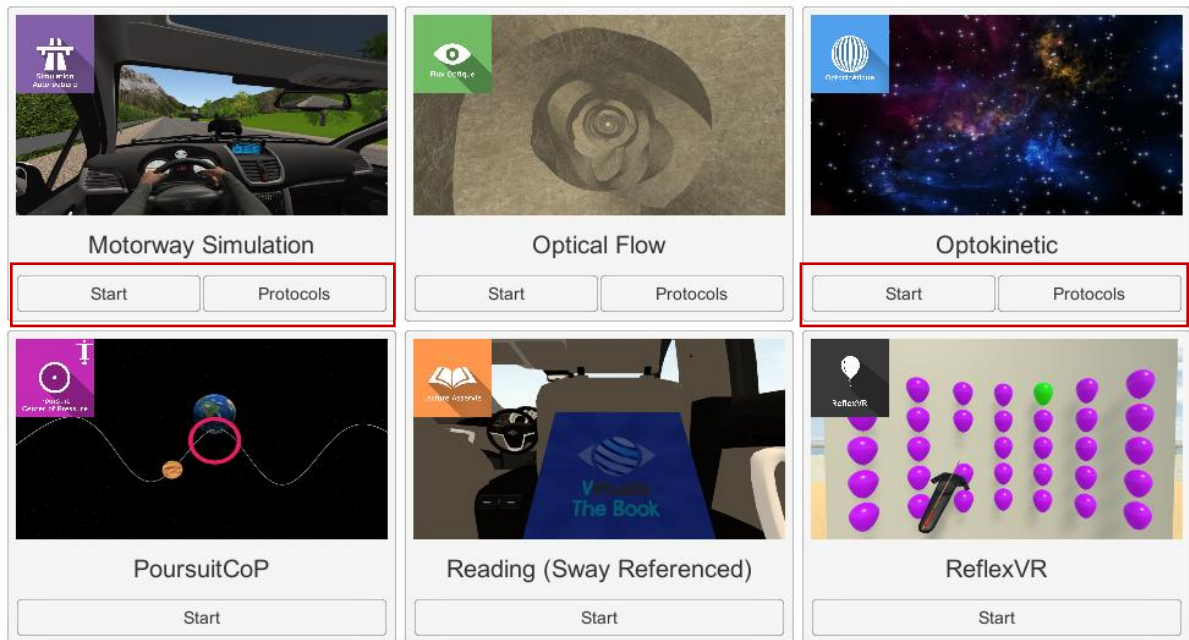
The software can be grouped according to criteria such as "Assessment" or "Re-education" and then by pathology type: Neurology, Balance, Functional or Motion sickness.

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

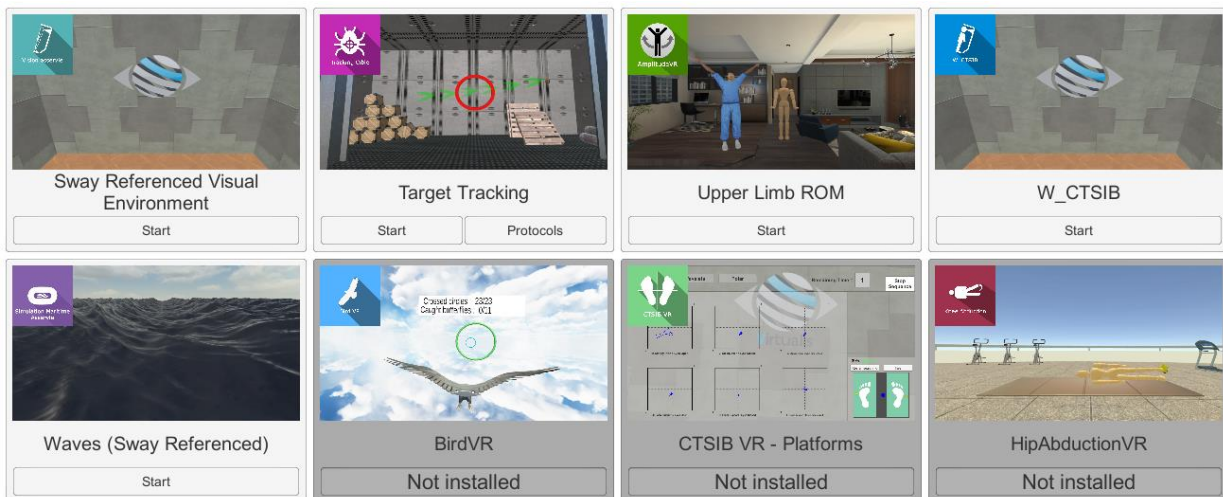


Some software can be started either in **manual mode**, by directly clicking the "Start" button, or in **protocol mode** by clicking the "Protocols" button.

**Manual mode** allows users to choose the settings for each environment. **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 grayed out. If you want to use it, please contact our sales department.



### 3. BOWVR

#### 3.1. Start interface



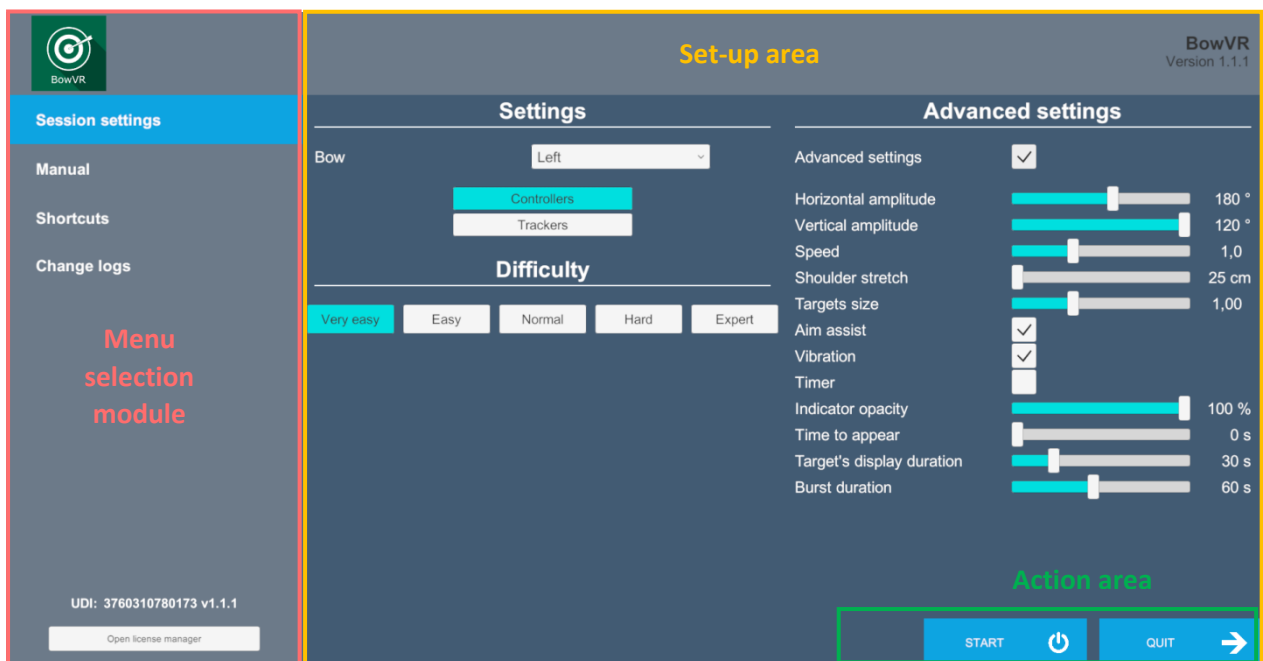
When the software is started in **manual mode** ("Start" button), the opening is performed in a launch interface, consisting of a module selection menu on the left, a set up area on the right, and an action area at the bottom right.

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

It is possible to access the general Patient Management menu from the start interface by simply clicking the "Quit" button located in the action area, or by pressing the "escape" key on

the keyboard.

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



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

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

Once an environment has been selected, it launches in the headset, and you can see and track what is happening in your patients' headset from the software window.

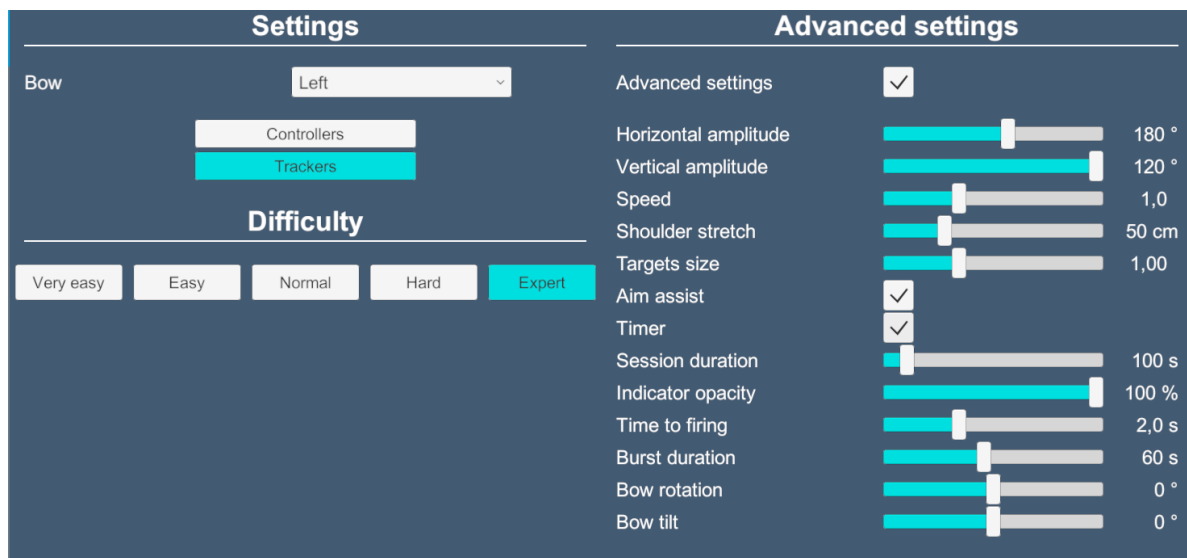
### 3.2. Software field of application

This module allows work on exploring the visual field, the strengthening of upper limb muscles, mobilization of the spine, global balance, exploration of the support polygon, the proprioception of and the re-application of weight on the lower limbs.

### 3.3. Installing the patient

Standing or sitting position depending on the patient's abilities; Choice of foot position: joined, spread apart, pointing outwards, etc.

### 3.4. Session settings



Depending on the difficulty of the selected exercise, the variable parameters for this software are as follows:

#### Settings

##### Choice of bow

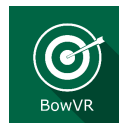
Left or right hand

##### How to carry out the exercise:

With controllers or trackers

Note: When there are gripping difficulties, the controller can be replaced by the tracker attached to a limb segment using the strap provided.





### Difficulty setting:

**Very easy:** 1 target in front of the patient

**Easy:** 5 targets in front of the patient

**Normal:** Targets around the patient

**Hard:** Targets and balloons around the patient

**Expert:** Target moving around the patient

### Advanced settings

#### Horizontal and vertical amplitude

The target display area can be adjusted using the cursor

#### Speed

The target movement speed can be set using the cursor.

#### Shoulder stretch

The degree of shoulder stretch can be adjusted using the cursor

#### Targets size

Used to set the target diameter using the cursor

#### Aim assist

The arrow trajectory is displayed if this function is enabled

#### Vibration

Possibility of activating the controller by checking the corresponding box

#### Timer

Used to define the session duration

#### Time to appear

The time between the appearance of two targets can be adjusted using the cursor

#### Session duration

The time the target is displayed can be adjusted using the cursor

#### Indicator opacity

The transparency of the arrow that shows the target direction can be customized using the cursor.

#### Time to firing

Time defined to complete the movement (using trackers)

#### Burst duration

Time defined for burst shooting after hitting the target

### Bow rotation and tilt

Settings available when using trackers; they can be customized using the cursor

### Score

At the end of the exercise, users will get a score representing their accuracy.

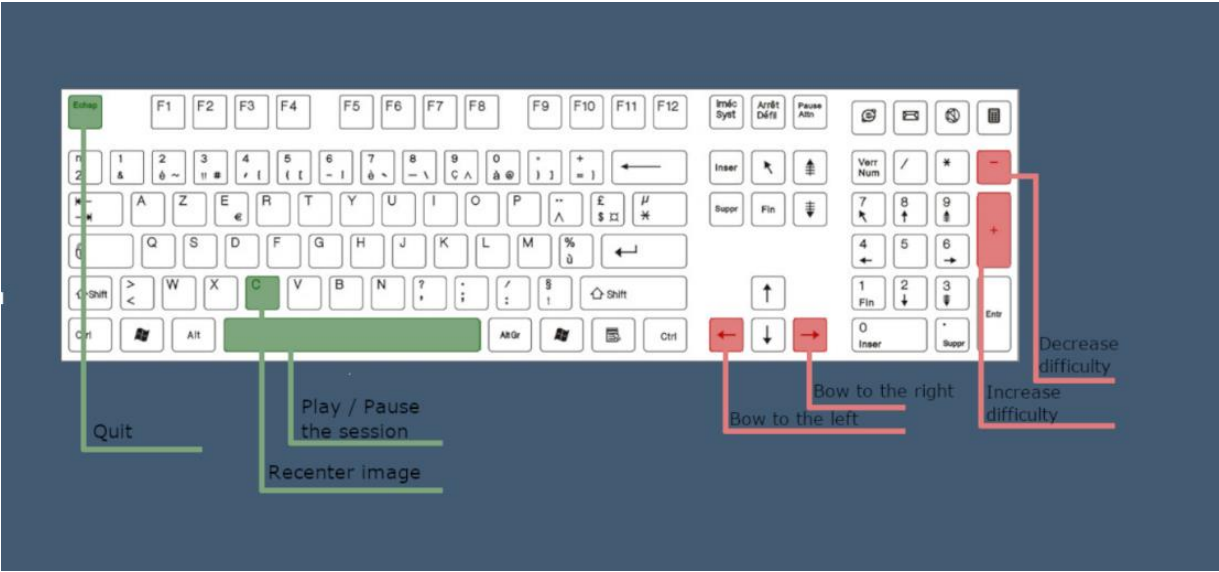
The reaction time is also displayed

## 3.5. Shortcuts

Keyboard or joystick shortcuts are accessible:

- on the "Shortcuts" tab available at the start interface level
- From the software, by clicking on the joystick icon in the upper right corner of the screen





### 3.6. Data processing

Data retrieval and analysis uses the Patient Management software.