CWI

Computer Wheelchair Interface: mobility as far as eye can see

CWI (Computer Wheelchair Interface) is an innovative mobility interface that enables autonomous eye-controlled wheelchair navigation. By using eye tracking techniques, CWI detects the direction the user looks at and moves the electric wheelchair accordingly.

Three modes are available. Two of them allow the user to move in all four directions : straight, left, right and backwards.

The "Arrows" mode displays direction arrows on the screen and the "Bars" mode shows 4 resizable rectangular zones.

The "Proportional" mode enables the user to describe a much smoother trajectory, covering nearly 80 possible fine-tuned directions.

Developed by the FST, CWI involves existing proven technologies that enable eye-computer interaction (VisioBoard, MyTobbi, Erica, Aléa, Seetech) and couples it with a dedicated electronic device. It empowers wheelchair users by allowing them to move without depending on the help or goodwill of a third-party person.

The control unit is easy to install on any powered wheelchair. It replaces the standard joystick and connects to the USB port of an eye-controlled computer. An eye tracker camera pointing at the user is used for steering. Another camera, fixed on the backside of the screen, shows what is in front of the wheelchair, thus making the screen almost invisible from the user's perspective. The whole system is fixed on the wheelchair by an adapted mechanism and is maintained at comfortable distance from the user by a metallic arm (40 to 80 cm). All these devices are powered up by the wheelchair battery itself, thus allowing full mobility.

To cause the wheelchair to move, the user only needs to look at the corresponding direction zone on the screen. Additional sensors can be installed on the wheelchair in order to detect obstacles and prevent collisions with walls and other people.

FST/08.2013

System requirements	Windows XP, Windows 7 (32/64 bits) and Windows 8 (32/64 bits)
Languages	French, German, English and Italian
The CWI Package contains	1x CWI device controller 1x USB cable 3m 1x USB webcam 1x CWI Setup CD
Optional accessories	sub9 adapter cable Switch (on/off) In/out R-Net module device

Warning notice

- Opening the device will result in total loss of warranty.
- Only use FST-certified accessories.
- Application: CWI has been exclusively designed for an indoor use, inside a secure safe area. It must be kept dry and clean at all time, and be installed in a place that protects it against incidental damage (e.g. under the wheelchair seat).
- Temperature usage : between 0°C and +70°C
- Min voltage 4.35V, Max voltage 5.25V