

## Virtual Reality

### **Voice-over 1:**

Here in Austria, student Petar Horki is controlling a virtual reality system using his mind. He thinks about walking and appears to move, the sensors reacting to activity in his brain. The system could one day help people with disabilities.

### **Petar Horki:**

Actually, I-I am not doing anything; I'm just imagining I'm doing a brisk foot movement, and by this imagination I can move then, at least in this virtual room.

### **Voice-over 1:**

The concepts of human scale in a virtual world developed in Barcelona have helped researchers here build a believable environment.

### **Voice-over 2:**

The patient has to move the wheelchair mentally by using his thoughts. The effect is the same whether the wheelchair actually moves or whether the virtual reality actually moves. Virtual reality is a medium to investigate and test this that's cheap and not dangerous.

### **Voice-over 1:**

At his workshops on the other side of Graz, Christoph Guger is developing similar tools. His systems rely on flashing icons on a computer screen.

### **Voice-over 3:**

For the brain-computer interface, we attach electrodes to the head to be able to measure brain currents. The task of the person then is to watch the icons flashing in a random sequence, and the brain will react to the icon I want, and that response the computer can recognise. That way we can control external devices.

### **Voice-over 1:**

Each time the icon flashes on the screen the brain reacts, and the computer monitors that reaction and then carries out the command. Christoph can type words or navigate through a virtual home without lifting a finger.

### **Voice-over 3:**

We've carried out some bigger studies using about a hundred people, and about eighty per cent of people can control it. To do this, we need five minutes of personal EEG-data.

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