

## Mise au point, 13 May 2007

Translation of the « Mise au point » show on TSR1 TV program about mind reading on May-13-2007 (<http://origin.tsr.ch/tsr/index.html?siteSect=343904>, dimanche 13 mai 2007, "Lire dans les pensées"). It has been only translated the part of the program related to the Electrical NeuroImaging Group of the Geneva University Hospital ([www.electrical-neuroimaging.ch](http://www.electrical-neuroimaging.ch)), the intelligent wheelchair from the Marnix Nuttin group at Katholieke Universiteit Leuven (Belgium) and the IDIAP (Martigny, Switzerland). (Translation done by Quentin Noirhomme)

### Legend:

- MAP: Mise au Point journalist.
- S: Sara Gonzalez Andino, Electrical Neuroimaging Group.
- Q: Quentin Noirhomme, Research Engineer (Electrical Neuroimaging Group).
- P: Pierre Ferrez, Research Engineer (IDIAP).
- J: Professor Jose Millan (IDIAP)

### Text :

**Background Image:** Electrical Neuroimaging Group. A wheelchair simulator is projected as background. The virtual wheelchair is driven by electroencephalographic signals.

MAP: The brain is like a motor that even at rest will turn at 6000 rpm. A motor that could, for example, allow for driving a wheelchair: A research conducted at the Geneva University Hospital.

S (who said to the pilot which direction he should take at next cross roads): Left ... Right ...

Q: It's like pressing a left or a right button

MAP: A button virtually pressed with the eyes. The flashing frequency of each button stimulates the brain on a different way. A simple look at the left button is translated into command and the wheelchair goes left.

S: This system is cheap, very reliable and very fast. The buttons can also switch on the TV or the light. In the present case, we use a wheelchair because its one of the patients need.

**Background image:** Intelligent wheelchair from Marnix Nuttin group.

MAP: Here is the wheelchair. It has been developed in Leuven, Belgium. But in contrast to the simplest Geneva project, it is equipped whit a multitude of sensors that enable the wheelchair to avoid obstacles even if it is also mind driven.

**Background image:** IDIAP, Martigny.

MAP: To know how it works, let's go to Martigny where people practice whit a little robot.

P: To turn left I imagine I move my left arm. To turn right I imagine I move my right arm. To go straight I associate words. These three mental tasks generate different brain activity maps. The computer is able to detect the correct map and to send the appropriate command.

J: This is totally mind driven. There is nothing outside to guide us. This is a voluntary and conscious decision.

MAP: The weakness of the system is that it requires an absolute concentration and the simple presence of the camera perturbs the operator. Therefore we had to make do with a simulation.

End of the translation (the film continues with other topics...)