Supplemental Materials

Table 3. A summary of electrode and frequency bin selections for each of the subjects used during the AR Drone Experimental protocol. Values were selected based on performance during cursor task training.

Subject	Right	Left
1	C4; 12Hz	C3; 12Hz
2	C4; 12Hz	C3; 12Hz
3	C4; 12Hz	C3; 12Hz
4	C4; 18Hz	C3; 18Hz
5	C4; 12Hz	C3; 12Hz

Electrode Selection: Electrode location and frequency bin choice are shown in table 3. C3 and C4 are located over the sensorimotor cortex. The 12 Hz bin on these electrodes are the initial choice for control until/unless a better alternative is found. The selection is done with the BCI2000 offline analysis software, and a higher R^2 value must be found over several experimental trials in order for a change to be considered. Only subject 4 changed from the standard electrode selection, and only frequency bin (from 12Hz to 18Hz) was changed. These standard subjects are appropriate for the BCI study in that their range of operation is typical of many BCI users.

Equations Describing Non-Linear Function

**Left/Right- Positive Equals Right Yaw**

$y = 0.9009, x \geq 1$

$y = 0.1(Rx^2) + 3 \cdot 10^{-1} \cdot Rx + 2.25 \cdot 10^{-7}, 0.05 < x < 1$

$y = 0, |x| \leq 0.05$

$y = -0.1(Lx)^2 + 3 \cdot 10^{-1} \cdot Lx - 2.25 \cdot 10^{-7}, -0.05 > x > -1$

$y = -0.9009, x \leq -1$

L and R were Left and Right weighting factors respectively. Values for each subject were between the range of 3 and 3.5.

Up/Down- Positive Equals Upwards Acceleration

$$y = 0.9009, x \geq 3/U$$

$$y = 0.1\,(Ux)^2 + 3\cdot 10^{-1}\cdot Ux + 2.25\cdot 10^{-7}, \frac{0.05}{U} < x < \frac{3}{U}$$

$$y = 0, -\frac{0.05}{D} < x < \frac{0.05}{U}$$

$$y = -0.1(Dx)^2 + 3\cdot 10^{-1}\cdot Dx - 2.25\cdot 10^{-7}, -0.125 > x > -\frac{3}{D}$$

$$y = -0.9009, x \leq -\frac{3}{D}$$

U and D were upward and downwards weighting factors respectively. Values for each subject were between the range of 0.3 and 0.6 so that subjects had the ability to remain in the appropriate altitude range of the landscape.