How do I use my ECS?
Everyday appliances with their own remote controls:
It is simple to control things such as TVs. The control unit is programmed to transmit signals as if it were the original remote.

Infra Red (IR) or Radio Frequency (RF) Sockets:
On/off appliances such as lamps or heaters can be plugged into a specialised power socket. This socket receives a signal from a control unit when both are programmed to send and receive the same signal.

Specialised equipment:
Some devices are manufactured for home automation and have IR, RF and, more recently, Bluetooth receivers. These devices include door controllers and telephones. These may be retrofitted or could require specialised wiring and some house alterations.

What devices can be used in an ECS
Entertainment:
Hi-fi, TV, DVD, cable TV are all easily controlled. It is also possible to access some game consoles.

Communication:
Specialised telephones can be operated using IR, this requires in built loudspeakers or blue tooth headsets. Phone books of telephone numbers can be stored on the phone and or control unit for easy dialling. Some control units can be connected to specific mobile phone handsets (consult ECS supplier).

Specialised intercom systems can be used for front door access, and or carer contact.
These can also be integrated with the telephone.
A variety of emergency alarms and call bells are available. It is possible to link these to call centres. Alarms can be triggered by the user or by sensors that detect falls, flood, fire, or gas. They can also include house security systems.

Physical environmental control:
Door controllers can be installed in internal and external doors. External doors are often custom made to include multipoint locking that is also controlled by the ECS. One may also consider additional opening options such as an infra red sensor or wall mounted push button or strike pad.
Electronic window operators, curtain rails and blinds are less common but useful for natural light and climate control.
The ESC can also regulate room temperature by operating fans and heaters.

Other appliances:
Some control units can be integrated with personal computers. Remote control toys are a favourite with boys of all ages. Some public and private elevators can be IR controlled. Page turners are pricey specialised appliances that can be integrated into an ECS and are essential for conventional book reading. The Click-to-phone is a specialised stand alone switch controlled mobile phone and even makes text messaging possible. The only limitation is your imagination - it is even possible to control your armchair!

Conclusion
Please see the previous three ECS articles and don’t be afraid to consult suppliers and users alike to help you design your own environmental control system.
I would like to say a special ‘thanks’ to all who have offered to participate in my ongoing research project entitled “A Generic Electronic Assistive Technology (EAT) Package for Persons with high Quadriplegia”
Thanks also to all who contributed to the “How I Do It” section. Further contributions are always welcome.

Michele Verdonck, OT and HRB Research Fellow

Useful Websites:
http://www.QEDonline.co.uk
http://www.pri-liberator.com
http://davecarthy.com
http://www.odel.co.uk
http://www.gewa.se/english
Technology and Spinal Injury Patients:

As we all know technology in general and most especially computers have improved life for many people. However in my case – someone who had very little experience of computers until my spinal injury in 2005 – technology and computers have become very much a lifeline.

I first experienced environmental controls in the NRH as part of my rehabilitation. Having a C4/C5 spinal injury I am a quadriplegic with very limited movement so environmental controls were going to be very important. At the NRH, I was given some guidance on the various types of controls and what was available.

Having investigated them as much as I could – I decided that the Keo System for TV, phone, opening the door, etc, in conjunction with Dragon Naturally Speaking for using the computer were the options I decided on – I would recommend people to investigate all the various options as there are different types available.

The Keo is a system that is attached to my wheelchair (though can also be attached to the bed if needed), with this, I am able to control the TV, answer the phone, open the door and also use it with the computer. This gives me a level of independence and privacy that I would never be able to have without it. I can now spend a couple of hours on my own, and should I need help I can use the phone or go out the door to a neighbour’s if necessary.

On the computer I use Dragon Naturally Speaking which is a voice activated software which recognises what I say and either types what I say (most of the time!) or moves up and down accordingly if I am doing something like reading the paper on the computer. The two main daily newspapers (Irish Independent and Irish Times) are now free to read online and this keeps me up to date with what is going on in the world.

I was lucky enough that I was able to purchase environmental controls due to fundraising by neighbours and friends, however, I believe everyone who would benefit from these controls should have access to them as a minimum when leaving the NRH to go home as it makes a huge difference to life for someone with a spinal cord injury.

Regards

Marty Coyne