

**Press Release**  
**25<sup>th</sup> May 2010**

## **Cytech offers High Security with Home Automation**

***Intruder Alarm installers today face a highly competitive environment. The market for Intruder Alarms although large is not growing as fast as it could do.***

Intruder Alarm integrators typically offer CCTVs, DVRs, access controls, automatic gates, intercoms as part of a total package. The intruder alarms available are not highly differentiated, all typically offering the same features and capabilities with little consumer brand recognition. As a result, price competition in established markets is fierce, as end-users know that any alarm installation company listed in the phone book is likely to be able to offer a similar system.

Home Automation systems provide an alternative and an additional source of revenue that is readily accessible to electrical engineers who have developed their interest in smart home technology and its intruder alarm capabilities.

### **What is Home Automation?**

The term Home Automation has been used in many contexts, from high speed networks, computer controlled homes, universal remote controls, touchscreens, Lighting systems with Scene control, home cinema and sound systems.

My personal definition of home automation is the ability to intelligently coordinate and monitor the operation and behaviour of appliances, lighting and subsystems in the home to achieve security, comfort, convenience and energy saving. I would not consider the ability to use a remote control or touchscreen or a designer keypad to control lights or a sound system to be an example of useful home automation. Such simple remote controlled systems just replace mechanical switches and have the benefit of convenience but do little more. The ideal automated home would require very little direct intervention from the occupants except to make changes to its preferred behaviour from time to time, although this ideal does not fully exist at present.

A security system, or more accurately, an Intruder alarm system is an essential part of most homes in most developed countries. Alarm systems typically have one or more keypads, magnetic sensors on external doors and windows and one or more motion sensors or Passive Infrared Detectors (PIRs) within the house. When the alarm system is armed, any intrusion detected by the sensors causes the sounders to be activated, and perhaps the alarm monitoring company to be notified.

Many home owners install security systems to obtain the benefits of lower insurance rates. However the true benefits of home security far exceed any savings in insurance. When the alarm system is connected to a central home automation controller, or is part of a home automation system then an intelligent home becomes possible.

A basic means of integrating security with lighting is the signalling of events from the former to the latter. Most simple alarm systems have a few outputs that are triggered by say, an intruder alarm or the system being armed and disarmed. In this manner, the lights can be made to switch on in the event of an alarm or to switch off when the system is armed. In a practical home automation system, it is only necessary to control strategic lights so that they can respond to predefined events.

### **Benefits of an Integrated Security and Home Automation System**

More sophisticated security systems are available that are well suited to act as the main controller in a home system or to communicate with another controller. Such systems have many programmable outputs as well as the ability to communicate via a serial interface like RS232 or Ethernet to lighting and other third party products. Events like the arming and disarming of the security system, movement in any zone, opening and closing of doors and windows and the occurrence of specific alarms like Intruder, Fire, and Power Failure can be linked to lighting and other subsystems in the home. This allows the security sensors to play a larger role in the intelligent home than just detecting intruders. Various sensors in the home include Motion, doors, windows, temperature and light act as eyes and ears for the intelligent home.

Some examples of intelligent integration of security with other systems include;

- When the security system is armed to Holiday Mode, lights and music can be switched on at suitable times in the day or night to give the impression that the house is occupied.
- Automatic garage doors and gates can be opened or closed with a single control that arms and disarms the security system at the same time.
- The heating in the home can be automatically switched on or off or turned up or down in response to the security system being armed to Away or Night mode or by Time Programmes.
- Schedules or Time Programmes allow automatic control of security, lighting and other appliances. These can be used to automatically arm the security system and switch off selected lights at night, and, for example, to water the garden. Some advanced systems calculate the sunrise and sunset times based on the time of year and location which can be major cities in the world or latitude and longitude coordinates. Automatic adjustment of daylight savings time changes is also a very useful feature for Time programmes as it removes the need to remember to change the time manually.
- Motion sensors in certain areas in the home can trigger the alarm in Away mode, but can turn on certain lights in Night mode, and switch them off automatically when no more motion is detected for a period of time.
- External motion sensors can switch on lights and trigger a recorded warning message.

The most common component of a home automation system is lighting, where one or more lights can be controlled by electronic switches, keypads or remote controls. Such lighting systems may be bus-based like KNX ([www.knx.org](http://www.knx.org)) or C-Bus by Schneider (<http://www.clipsal.com/cis>) where electronic low voltage switches are connected in a bus throughout the house, and the lighting loads are connected directly to relays or actuators rather than through electrical light switches. Bus lighting systems are very reliable and have very extensive functionality. However they will probably not be found in the average home due to the cost and the fact that some electricians are not yet familiar with the wiring scheme. When such bus systems are installed in a home, KNX or C-Bus enabled security systems which work directly with the lighting system are a great advantage as they allow the security system to directly control the lighting, and conversely allow buttons on the lighting system or touchscreens to operate the security system.

Lights and appliances can also be connected via the AC outlets using Power Line Technology like X10 and its variants, although this is more suitable for non-essential items like plug-in devices because of problems caused by noise on the power line. Other lighting products communicate by wireless means like Infrared and RF signals. Wireless technologies used in Home Automation, including products complying to the Zigbee and Zwave standards, are expected to be more widely available at a lower cost in the near future.

Sound and Entertainment multi-room systems controlled by touchscreens and keypads that also control lighting with mood scenes and underfloor heating are a typical part of home automation for high end homes in the UK. The cost of such systems ranges from many thousands of pounds, to more than 5 figures but these are not an essential aspect of a home automation system.

### **Affordable and Practical Home Automation**

In summary, Home Automation is not just for the very rich, with full scene control of every lighting circuit, and entertainment systems with touchscreens in every room. It should be understood that it is not necessary to be able to control every light and appliance in the house, to have a practical home automation system.

Any reasonably sized house can be a candidate for automation. The key to practical and affordable automation is the integration of strategic appliances, lights, security and other subsystems in the home to create an intelligent home which provides comfort, convenience and energy savings for the occupants. I believe there is large untapped opportunity to bring affordable home automation incorporating smart security systems to a much wider market.

### **Ends**

L Y Chiu is an Electrical Engineer with more than 20 years experience in the development of access control, electronic medical products, handheld display devices and Home Automation Systems. He is the founder of Cytech Technology Pte Ltd in Singapore that markets the Comfort Intelligent Home System worldwide.

For further information:

Email: [info@cytech.biz](mailto:info@cytech.biz);

Website: <http://www.cytech-europe.co.uk>

See the Comfort video on <http://www.youtube.com/watch?v=vHS6zTFFLiM>

Issued on behalf of Cytech Europe Ltd by Phyllis Oberman Consultants:

Tel: 0203 234 4098

e: [media@cytech.biz](mailto:media@cytech.biz)