Half Day Seminar on Home Automation and Security System

By: Ir. Lee Kok Chong

On 27 January 2005, the IEM Electrical Engineering Technical Division jointly organised a half day seminar with Clipsal Integrated Systems (M) Sdn. Bhd. on "Home Automation and Security System." The seminar was conducted by two speakers: Mr. Stace Tzamtzidis conducted the first session and Mr. Allan Malcolm conducted the second session.

In the first session, Mr. Stace Tzamtzidis emphasised on an integrated solution for home automation systems that centralises control and provides a simple, single, unified user interface. He also explained about interoperability between systems which results in less hardware, reduced confusion, simpler operation and improved functions. An integrated solution means that a single input command may result in multiple actions, for example, "arm the alarm panel" may result in the additional action "turn off all lighting." With independent systems, the homeowner will need to switch these separately. In addition, a single unified interface means less clutter on the walls, less codes and sequences to learn and improved system reliability as the hardware count is reduced.

Mr. Tzamtzidis continued his session by discussing the different levels of integration between control systems and devices, i.e. System Level Integration and Device Level Integration. System Level Integration means that there is one connection to the open protocol from the entire building system, while Device Level Integration means that each component in the system speaks the open protocol directly. A protocol can be thought of as a language that electronic devices use to talk to each other. Protocols are made up of a set of rules detailing the following:

- the speed and format at which they will transmit any data,
- what data will be transmitted, and
- the medium that the information will be transmitted on, e.g. power cable, radio frequency, fibre optic cable or infrared.

Finally, he explained the differences between open protocols and proprietary protocols, and their advantages and disadvantages.

In the second session, Mr. Allan Malcolm talked about home automation systems, devices and their functionality. He then emphasised on ADSL and other broadband technologies. These technologies ensure that a rapidly growing percentage of homes have access to high-speed Internet connections. He also talked about currently available technologies, and explained some of the features, limitations and considerations when integrating broadband services into the home. Finally, he presented some broadband services solutions for single homes as well as for higher density developments such as condominiums and gated communities.

Finally, the seminar ended with question and answer session. In conclusion, the integration and interoperability between systems and devices for home automation and security systems under a centralised control using an open protocol will be the future trend in the industry. As such, it will bring new concepts into our consumer lifestyle. ■