ASSA ABLOY FUELING REVOLUTION

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ASSA ABLOY's development of Hi-O electronic locking technologies deserves careful attention from installers, locksmiths and end-users alike. If the world's largest lock manufacturer is successful, Hi-O will change the nature of electronic locking forever.

DESPITE the posturing of the aristocracy, all revolutions germinate at ground level among ordinary people. All revolutions? Ok – so we know sociological shifts and technological developments can't always be compared with each other but they often can. Thoughtful industry commentators realize the impetus pushing electronic security ever deeper into networking is not the development of amazing new products end users must build networks to deploy. Instead the revolution is bog standard Cat-5 cable and racks of two hundred dollar Gigabit switches that provide a framework for which amazing new products must be built so manufacturers can survive.

In challenging environments; and make no mistake about this, the current market is challenging; smart companies adopt a future focus. They think hard about the market directions of tomorrow. And the really clever ones don't think so much about developing new products as they do about revolutionizing the platforms on which all future products will stand. This is smart thinking at a number of different levels, perhaps the most important one being that it embraces the initiative very early indeed.

ASSA ABLOY is one of these intelligent companies. Its development of Hi-O technology must be seen as a deliberate and measured attempt to provide direction and an assured future to the electronic locking segment and arguably, to reload electronic locking profit margins in the only way true market leaders ever can - by significant upward movement of the technology bar.

Visitors to Security 2007 last month could be forgiven for thinking ASSA ABLOY had trotted out Hi-O in recent months for their personal edification but this is a mistake. The company has been tunneling away on Hi-O for years, carefully developing its technology and even more carefully choosing its partners. In ASSA ABLOY's case, there are probably 2 partners central to Hi-O, the first being Cisco, the world's leading networking company. The second, strange as this assertion is going to

sound, has to be the CiA and its CANbus comms protocol with which ASSA ABLOY has developed a new generation of electronic locks.

Of the 2 partnerships, CiA and its CANbus protocol are the most important.
Use of CANbus in electronic locking devices not only makes installation miles easier and cheaper (significantly expanding market size). ASSA ABLOY'S adoption of the open CAN-bus standard also makes every lock and access device manufacturer in the world a potential partner. It doesn't get much bigger than that.

What is CANbus?
In the briefest of terms, CANbus (CAN for Controller Area Network) was built to manage short messages of around 8 bytes with priority collision resolution on modest cable runs. Intel built the first CAN chip, the 82526 way back in the mid-late 80s and Philips was next cab off the rank a few years later. Today around 20 CAN chip makers serve a range of industries, the most prominent being auto manufacturers which gobbled up more than 200 million CAN controllers in 2005. This latter is a symbiotic relationship of great importance given CANbus technology has been significantly strengthened by the demands of auto makers who insist on processors with a minimum lifespan of 15 years.

The upshot of it all is that CANbus is among the most dominant and most capable of bus protocols. It is governed by the CAN in Automation (CiA) users and manufacturers association which was formed back in 1992 and dedicated itself to bringing about standards allowing the exchange of data at the application level where the existing CAN Application Layer meant every user had to build their own comms profile.

The result of a series of parallel efforts with CAL were 2 protocols, CANopen and DeviceNET, with CANopen ideal for embedded networks in all kinds of machine controls. Essentially CANopen makes proprietary application layers unnecessary and that's good news for second-gen developers of CANbus networking solutions – developers like ASSA ABLOY.

According to ASSA ABLOY's vice president of shared technologies, Glen Greer, CANbus is perfect for electronic locking applications where a simple flying lead and 2-wire data cable replace the complexity of the analog cabling that's currently required.

As Greer explains, onboard CANbus processors and push-in data plugs are the key to Hi-O enabled electronic locking devices. One beauty of the company's new Hi-O locks are that they make life easier for both installers and locksmiths.

"Connecting locks to door controllers is time consuming," says Greer.

"It often involves a meeting between the locksmith and the integration team – with Hi-O that all changes. Locksmiths simply made the lead accessible and integration teams then plug the CANbus into the controller."

But the real benefits of Hi-O accrue to end users who wind up owning and managing access control systems that have feeling all the way down to their fingertips.

ASSA ABLOY'S Hi-O
Essentially all Hi-O locks have an onboard processor and are connected to each other over a simple and reliable CANbus. This doesn't mean the end of the door controllers that offer redundancy through distributed architecture but it does mean that suddenly electronic locking devices have minds of their own.

"All Hi-O devices have auto configuration which means they 'know' what they are in the overall access control system," Greer explains. "The system scans itself each time there's a new device added with all devices aware of all other devices on a network."

According to Greer, key benefits include ease of setup thanks to auto-configuration, along with the ability to troubleshoot the system more effectively because the CANbus system is always aware of failures on the network. System techs and administrators can also analyse door behaviour and check on things like over-voltage that in the past would have required a site visit.

"This additional processing power means maintenance can happen automatically with problems sorted out before they develop," says Greer. "And at another level security managers can now know that doors are closed, locked, functional and fully maintained.

"With legacy systems, your knowledge of door state is stuck at controller level, while Hi-O gets all the way down to the door – it brings a level of monitoring that allows integrators to guarantee operating service and security managers to be certain of system operation."

And all of this doesn't just apply to locks. According to ASSA ABLOY, Hi-O allows every device in a door environment to communicate with every other device. The future according to ASSA ABLOY will see all components handling access, identity control, Evac, code reading, alarms, maintenance and other applications, connected and controlled by Hi-O technology.

It's clear from what Greer says, that ASSA ABLOY's Hi-O enabled locking family is designed give future proofing in many directions. For a start, these self-aware Hi-O locks are self governing and can be used to give a fully functional access controlled door with no need for a door controller. There's management software that allows reconfiguration of locks as well as giving the ability to create passwords and networks. At the same time the locks can integrate readily with access control systems and will make them far more intelligent at a number of different levels.

"With Hi-O general system rules can be changed or propagated through a system and that means things like CCTV cameras can be linked far more closely to door operation," Greer explains.

An important fact is that the widespread nature of CANbus means other developers can easily build CANbus ports into existing equipment, allowing them to integrate with Hi-O locking devices. Whether such systems are alarm panels, fire panels or building automation solutions depends on third party developers.

ASSA ABLOY is keeping a close eye on developments like PoE and PoE Plus. The thinking here is that if locks are linked directly to a network then UPS support could come from the existing network power supply. So are fully networked locking devices part of the access control equation in the medium to long term? ASSA ABLOY clearly believes so.

Greer told a meeting at Security 2007 last month:

"ASSA ABLOY's Hi-O is a standardized new technology for control and security of physical access ways that enables plug-and-play capability and intelligent operation between all the devices involved in a doorway solution," said Greer.

"The interconnectivity and networking capabilities ASSA ABLOY establish with Hi-O, will bring Internet-speed evolution and convergence to our industry."

This is a big call but by no means unrealistic. Consider that the general consensus among electronic security people is that IP cameras will one day connect directly to secure, reliable networks with no dedicated servers or controllers between camera and network.

When it comes to access control things are somewhat greyer. At present, door controllers provide the gateway to wider data networks though some access control commentators and manufacturers say that in the future this gateway will be network compatible readers.

ASSA ABLOY's Hi-O goes further still by allowing locks and any other compatible door device to connect directly to an IP network. So what does Hi-O ultimately mean? It means that auto-configuring access control systems offering super reliable and highly secure distributed architecture at lock level are possible. It means that in the future access control systems will be far more affordable. And it means that the access control industry is going to become very large indeed.

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