



NORDIC DESIGN: FINNISH & SWEDISH TECHNOLOGY

Finland

Helsinki, Finland. Capital of the country best known for being home to Santa Claus, the sauna and the archway metal detector. Visit Metorex Security Products and you'll be lucky enough to see at least two of the three in the same location...for how many other security manufacturers can boast a sauna within their product presentation suite?! More about that later...

Setec

First stop, Setec. Setec may produce some of the most technologically advanced passports in the world, yet its origins date back 125 years when it was established by the Bank of Finland to produce bank notes. Since 1998, when the Bank sold off 60% of the company, currency production is fast being replaced by banking cards, GSM SIM cards and passports as its main area of operations.

And, in breaking news, an announcement was made on 27 October that

Top: The Nokia TETRA radio for the Public Safety Professional

CapMan and the Bank of Finland have signed an agreement, according to which the Bank of Finland will sell its remaining 40% stake of Setec shares to CapMan's funds. The transaction still requires the approval of the Finnish Competition Authority. CapMan is one of the leading private equity investors in the Nordic countries and specialises in



mid-sized buyouts in various industry sectors, technology investments in the IT and telecommunications sectors and investments in life science companies.

Setec is the only company in Finland that cannot, by law, employ people with a criminal record, so background checks of the company's 418 employees are of utmost importance. It is further indicative

The Nordic countries have long been renowned for their design capabilities in the fields of fashion, architecture, ceramics and jewellery. Yet, as **Philip Baum** discovered, even in the security industry, the Nordic region is developing some of the most effective, and aesthetic, technologies and some of our industry's most famous names are proud to call it home.

of the secure environment in which passports, like currency, must be produced.

Finland alone requires 400,000 new passports per annum. Combined with Setec's passport production for Sweden, Norway and Lithuania its output is 2.5 million per annum, let alone another 2.5 million national ID cards that are produced for Finland, Singapore, Tunisia and Belgium. Setec also produces Finnair's frequent flier cards.

Whilst the company has concentrated its marketing efforts on the Nordic region, they estimate that there are 30 to 40 million passports issued each year in Europe and 200 million world-wide. Growth potential then is huge for a company whose passports are some of the most secure in the world. The basic document body consists of an integral polycarbonate material to which other technologies, such as contact and contactless chips, MG-strips and optical memory can be applied making the finished product relatively forgery proof. The issuing government can, in effect, simply order as many security features as it desires and, given ICAO recommenda-

tions, can naturally incorporate biometric identification features.

Finnish Security Projects

Whilst establishing passengers' identity is key to security, screening them remains another challenge. And effective screening relies on effective training. This is where Finnish Security Projects Limited comes into its own. From the start, in 1994, the company has been involved in various security projects (planning, consultation, VIP protection, non-lethal force instruction), yet since 1999 aviation security related tasks have been very much part of the company's agenda. Their main courses focus on airport security guard awareness, X-ray, body and bag search practice, explosives and weapon recognition and dangerous goods. In addition to the aviation and maritime industry the company has clients in the military, government and private industry, mainly offering non-lethal force training, explosives and X-ray recognition for security staff.

This year the company has also become involved, in conjunc-

tion with Jangle Ltd., with the production of SERIE explosive simulants; a new mouldable mass that can be used for training and testing X-ray screeners. It can be supplied in different shapes and formats ready from stock - C4/P4/M112 demolition block/dynamite and electric detonators. From special order they also offer tailor-made training aids for special needs, anything from teddy bear with C4 to laptops with an explosive charge contained therein.



Mirasys

Mirasys was established in 1997. One might not know the company's name so well, with many of its products being over-branded, yet with over 50% market share of the high-end/mid-range digital video recorder (DVR) market in Finland and sales that have doubled annually since 2001, their impact in the world of CCTV has been considerable.

Their solution allows for the combination of IP and analogue cameras using the same DVR and facilitates the remote monitoring of sites by management personnel from wherever they may be located.

The Securitas Group is the company's most important partner and it is this relationship that secured them the prestige contract for the Finnish Civil Aviation Authority in Helsinki airport. Furthermore, Danzas, the freight forwarding company, uses Mirasys solutions in both Sweden and Norway, as does Muuga Harbour in Estonia, the Helsinki Metro and Finnair.

Metorex Security Products

Metorex Security Products has, since 1998, been part of OSI Systems, the stable housing Rapiscan and Ancore. Yet the company's origins date back to 1960, for it was then that Outokumpu, a mining company, realised that it needed a metal detection solution to prevent its stone crushing machines from being damaged by miners lost hammers. Their entrée into aviation security was a result of the dramatic increase in aircraft hijacking and Outokumpu sharing their offices with Finnair. People talk and solutions are found...

Metorex Security Products have scored a number of firsts in the metal detection arena. Its Meteor 120 was the world's first ever archway that utilised digital signal processing, which in turn became the first weatherproof archway that could be permanently installed in the harshest of climatic conditions. The Meteor 200 was the first truly multi-zone archway detector, whereby eight separate metal detectors were built into a single unit.

Being of Finnish origin, solutions had to be effective yet also stylish and environmentally friendly. Safety is naturally an issue too and, like their competitors, the Meteor range pose no health risk to travellers, be they pregnant or fitted with pacemakers. Yet, like so many other safety issues pertaining to aviation, the general public remain unconvinced and, whilst pregnant women freely walk in and out of shops secured by electronic anti-pilferage systems with three or four times the output of an archway metal detector, they request pat down searches at airports!

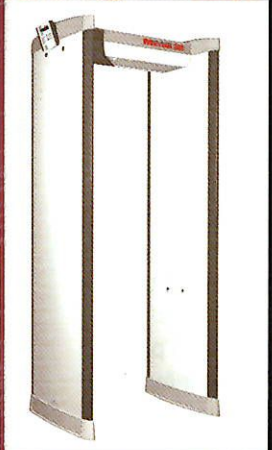
Their latest product, the Meteor 300, took metal detection back to the drawing board. Rather than simply improve existing products, they opted to start from scratch; Schiphol airport was first to deploy the model in February this year.

The Metorex Security Products detectors are now found in 125 countries; nearly half of the sales being in the United States, about one third in Asia and the rest primarily in Europe and the Middle East. Whilst each detector passes through their Helsinki factory prior to distribution, manufacture of the archways is outsourced in both Finland and Malaysia. The coils themselves are also of Finnish origin, produced by Oy SA-NY Ab, whilst the electronics come from InCap, located close to Finnish Lapland.

Nokia

No section of Finnish technology would be complete without reference to Nokia.

It may seem odd that a company best known for its mobile phones is 138 years old, but Nokia is exactly that. Only it has moved some way from its roots in paper production...



Archway Metal Detector Evolution Metorex Security Products style

Communication is fundamental to an effective security regime. Most police authorities still rely on traditional analogue radio communication, yet since 1997 an alternative, far more efficient and effective means of communication has existed: Terrestrial Trunked Radio, better known as TETRA.

TETRA offers digital communication to large regional and local networks, such as an airport, thereby linking together the varying agencies that may need to be able to communicate with one another. Whilst it is government that actually buys into the service, it can of course licence private usage and, where airports are in the private sector, this is where Nokia sees huge market potential.

Every manufacturer likes a case study and Nokia can use Aeroports de Paris as its standard bearer. 3000 users at Charles de Gaulle, Orly and Le Bourget airports are able to speak with each other via 14 base stations, using only a single exchange unit. They are limited only by the system administrator (despatcher) who determines the security clearance status of each user that will, in turn, determine with whom they can communicate. As a result, users from the security services, British Airways, United Airlines, Lufthansa, American Airlines, Hilton, Mercure, Sheraton and Ibis hotels, La Poste, Météo France, SNCF (railways), Servisair and Avis, Herz and Europcar rent-a-car companies all operate on the single network!

Hopefully, the Paris example will assist Nokia in securing many of the ten or more other airport projects it is currently bidding for around the world.

It is in emergency scenarios that TETRA comes into its own as the system offers a secure environment with a priority and emergency call service. The security authorities can therefore, in broadcast mode, make announcements to the entire TETRA community, whilst sub groups can effectively liaise with each other without disturbing other users. Settings can also be adjusted to enable either express communication, where the call recipient does not need to

actively answer or standard one-to-one communication.

Sweden

Sweden may be best known for its top-of-the-range automotive industry, international tennis stars and European song contest winners, but whilst Finland offered us saunas in its presentation rooms, none of the Swedish companies offered replays of Bjorn Borg matches or Abba recitals! Maybe I should be grateful...

Gunnebo

You think Nokia's 138 years of age is impressive. Try 1764 as a birth date! For that is when Gunnebo came into existence. They too have moved some distance from their origins of nail production to become one of the world's leaders in access control.

A long history, yes, but it has only been over the last 30 years that the company has been marketing entrance control solutions, initially to offices, embassies, banks and the military. However, the company now views airports as a major target market and is offering solutions that are specifically designed to reduce staffing requirements and, by extension, costs.

Gunnebo has estimated that, on average, a European security guard costs \$17,000 per month to employ 24 hours per day. So, whilst the initial outlay for a gate or turnstile may seem significant, the long-term cost savings of replacing guards with staff/passenger control systems are significant.

ImmSec is Gunnebo's latest product. Targeting the immigration control market, the gates incorporate biometric technology into the control solution. Trials will commence in Frankfurt in December with gates using iris recognition technology.

Yet more than 50 airports in Europe and Asia are already using other items from the Gunnebo range. On 3 November 2003, Gunnebo announced that it had signed an agreement with Avinor, the Norwegian Civil Aviation Authority, to supply anti-return gates as a means of upgrading security at 18 of Norway's airports. The first phase of the contract,

including installation, is worth some 15 million Norwegian Kroner (MEU 1.8). Two more installation phases are currently being planned.

Anti-return gates with double doors (PasSec High Security) and Compact Save Security Manlocks will be installed in the first phase to prevent the uncontrolled movement of passengers from landside to airside. Among the airports included in the first phase, which will be completed in January 2004, are Oslo's Gardermoen, Kristiansand, Kirkenes and Svalbard.

PasSec HS is a double, anti-return gate consisting of two doors separated by an integrated corridor. The gate functions as a single electronic unit with a central control unit. The PasSec has integrated radar sensors and photocells that detect the direction of movement and open and close the doors electronically, as well as sounding an alarm in the event of misuse. Compact Save, which has double doors, satisfies the most stringent security requirements, and has an integrated optical, single-person control function. It also has a certified escape capacity for more than 300 persons

Gunnebo is far more than gates. It also supplies fencing solutions and more than 90% of Swedish airports are fenced by the company.

Dynasafe

Dynasafe originated from the Bofors group of companies, which was founded 1646, making even Gunnebo seem youthful...

Today, Dynasafe AB is one of the world's leading designers, developers and suppliers of systems for the safe containment, transportation and final destruction of explosives and munitions. The first of what was to become one of Dynasafe's best-selling products, the ECV detonation chamber, was in 1981 supplied to Swedish Detonic Research Fund. This chamber, designed for 5 kg TNT, is still in operation at the research station close to Stockholm, Sweden. So far more than 1000 detonations have been carried out with varying sizes of charges.

The Dynasafe range of explosion containment and suppression chambers is tailored to handle anything from 50g to

25kg of TNT (or equivalent). The containment chambers from Dynasafe protect against blast wave and high-speed fragmentation and are also gas-tight. This is of crucial importance when toxic chemical or biological components may be present.

Axis

When it comes to network video products, Axis is one of the more experienced companies. Founded in 1984 and offering network video solutions since 1996, the company has more than 200,000 professional network video products installed in 70 countries.

The market potential is huge given that only 2-3% is currently operating digitally. Like Mirasys, Axis does not wish to be the systems integrator. They partner with companies such as Honeywell, Lenel or Loronix for hi-end solutions – in effect if a client needs more than 16 cameras on their system.

The company produces both network cameras and video servers. The cameras are digital with a CCD chip, thereby self-sufficient units with their own processors that can compress an image. Their video servers are system upgrades that take an analogue input, from existing security infrastructure, and convert it to digital.

One of the company's success stories is their installation at Sydney Airport. The total system was designed by Honeywell which took Axis video servers to develop a comprehensive network-integrated CCTV solution. The system allows operators to view images from hundreds of analogue cameras and control the PTZ (pan/tilt/zoom) cameras from multiple locations as well as to review recorded video sequences in the aftermath of a security incident. Axis is working in a number of other airports, three in the USA and three in Europe (Helsinki, Paris Orly and Paris Charles de Gaulle), and has also recently moved into in-flight security surveillance.

Domestically, in Sweden, CCTV is a hot topic, especially given that the alleged killer of Swedish Foreign Minister, Anna Lindh, was caught as a result of the

department stores archived video footage.

Precise Biometrics

Many Nordic security manufacturers seem to have their roots in the Middle Ages and Precise Biometrics is yet another company claiming to be old. But, "old" only in the biometric industry...for it is now six and a half!

Whilst their background is in fingerprint recognition, with all their own software products being based on their patented Precise BioMatch™ fingerprint-matching algorithm, they are now embracing other biometric technologies and offering clients integrated biometric solutions either by going direct or by working with other system integrators. A good example of this is their cooperation with the Swedish system integrator Fyrplus which is running a pilot programme for Scandinavian Airlines that is evaluating both fingerprint and iris recognition technologies.

Precise Biometrics' clients are varied. The City of Stockholm school system has implemented fingerprint access to its computers at Kvarnby School, the Dutch Ministry of Justice is using a solution from Precise Biometrics to permit only authorised users to utilise its computer network and the Bank of Luxembourg now require its 600 employees to biometrically access its computer system rather than rely on the memorising of a lot of different passwords.

The travel arena is not new to Precise Biometrics. Every year, 1.2 million passengers cross the waters between the Danish island of Bornholm and the Swedish mainland with the ferries of the shipping company Bornholmstrafikken. In order to enable its frequent travellers



to buy tickets and check-in quickly, Bornholmstrafikken has opted to issue

them with a smart card containing the users fingerprint. Already 8,000 users are registered.

Fingerprint Cards

Last, but by no means least, in the picturesque city of Gotenborg, a quaint, old building houses the offices of futuristic Fingerprint Cards. In existence since 1996, the company supplies the proces-



sors, the sensors and the algorithms to facilitate the biometric identification of individuals by their fingerprint.

Unlike Precise Biometrics, Fingerprint Cards specifically elects to sell via OEM suppliers such as Bewator, Motorola and Texas Instruments. Indeed, such companies willingness to use Fingerprint Cards' solution is in itself a major selling point. They like to see themselves as being the "Intel of the biometrics world" – a nice analogy...

Their algorithms are designed to analyse fingerprints in 3-D, as opposed to standard 2-D, thereby evaluating the depth of the ridges and valleys in a fingerprint, as well as the pattern.

Durability of the sensor is another key selling point, with products tested to be functional after 1 million finger swipes and resistant to scratching by fingers, nails and even keys.

Conclusion

The Nordic region certainly offers the entire gambit of security solutions, from biometrics to metal detection and communication to blast containment. And with so many companies steeped in history that would be a match for any other industry, region or economy, I suggest the long-term prospects are more than just encouraging... ■