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special report

By Faeezeh Parkes

The rest of the world, Australians included, have always looked to Great Britain for trends in CCTV. No longer. The challenges that hamstrung local developments have led to cutting edge developments in video transmission

CCTV over mobile phones has arrived in Oz in a big way and we're ahead of the game.

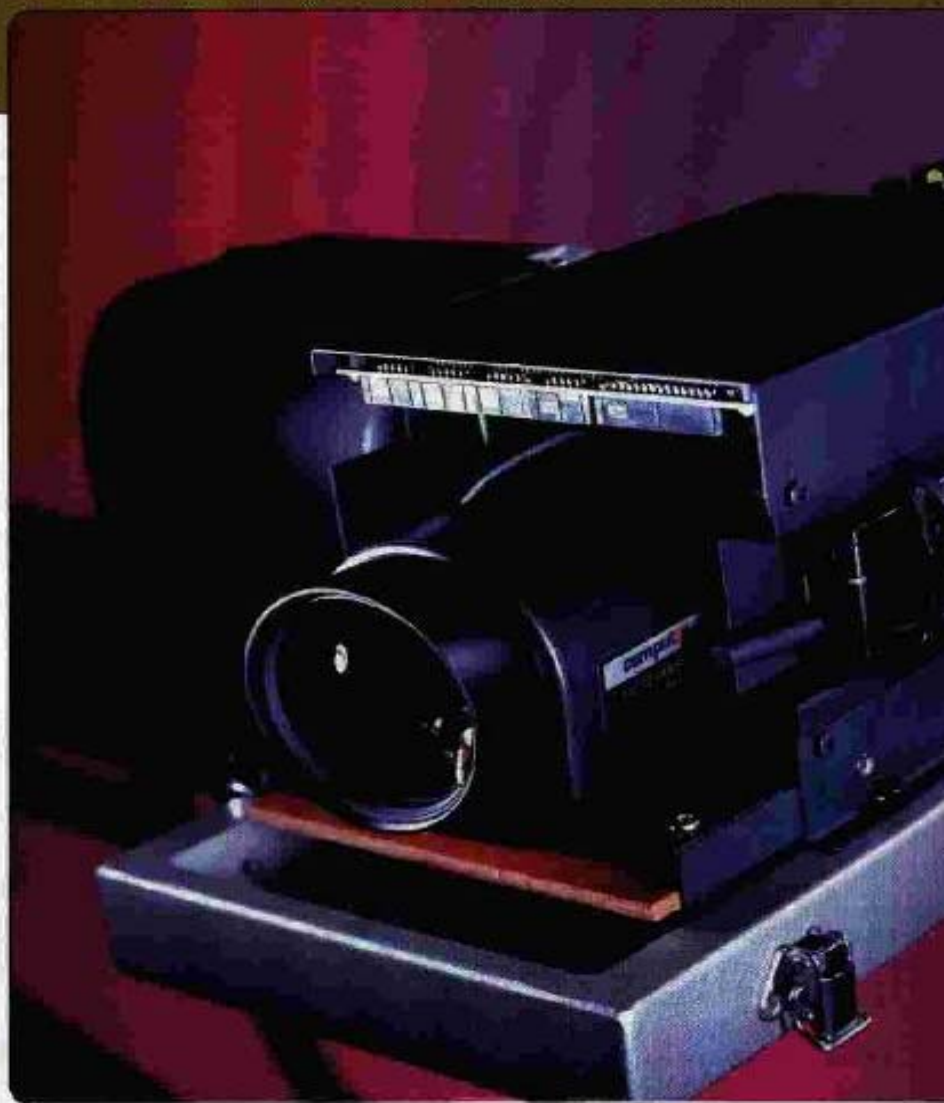
Traditionalists in the UK have been resisting the introduction of this IT-led technology using the Rotakin standard as a barrier to entry. And yet over here at the Sydney Olympics viewers at trackside were transmitting live video from palm devices to London through their mobile phones!

Now *Security Electronics Magazine* can reveal that due to mounting commercial and political pressures in the UK, the Police Scientific Development Branch was pressured by the Home Office to kick off secret trials of OCTV (Open Circuit Television - video over mobile phones) on September 29.

Choosing three towns including Great Yarmouth and Kings Lynn (the first town centre surveillance system in the world with nearly 100 cameras), these trials are being assessed by an independent risk management team from Optimum that this month is overseeing the first UK-style CCTV application in New Jersey, USA.

So what are the driving forces? There are over 42,000 towns, villages, and suburbs in the UK of which only several 100 will have CCTV including the major cities; similarly in Australia we have thousands of remote areas and small towns who desperately want CCTV. But in both countries there are two major problems. Firstly, the cost of installation is prohibitive (worse in Australia where wiring distances are greater) and by this we mean primarily wiring and microwave links.

Typically town centre surveillance systems pay 5-8 times the cost of the products for simply wiring with fibre optics throughout the town; microwave links are equally expensive. It costs money to go around buildings, down roads, set up line-of-sight microwave dishes, undergo lengthy civil works, etc. A small town of less than 10,000 population simply can't afford a \$A200,000 wiring installation bill when most of the benefit is hidden under the ground.



And those that can afford installation usually can't afford the maintenance and running costs. This is dichotomised between transmission costs (typically \$10,000 per annum per camera lease line to the Telco), plus around \$120,000 per annum for control room costs (three guys, 24 hours a day, 365 days per year). It is one those great mysteries that running costs almost always end up between \$200,000 and \$300,000 per year no matter the size of the system. These pain barriers are fine for a city with a population of 500,000, but are woefully extortionate for the towns, villages, suburbs, neighbour hood watches, etc that desperately demand CCTV. Quite simply, the size of the problems these towns and villages face does not warrant that level of financial commitment required. These places have sporadic problems on Friday nights, Saturday nights, and other

Tyranny of distance



events during the year but they do not require 24-hour surveillance with all the overheads the control room demands, including Home Office regulations conformance. The IT industry no longer sees the future of the world in terms of fibre optic networks but in terms of wireless data communication and the schedule of mobile network rollout over the next 36 months includes a considerable attack on video transmission over wireless.

Already wireless speeds have increased from 9.6kb/s to 14.4kb/s in 80% of the UK. This has been achieved by simply dropping error coding. And wireless standards such as HSCSD (High Speed Circuit Switch Data) offer 4 digital channels giving 56kb/s rates equivalent to current Internet connectivity.

Here in Australia, Telstra is soon to announce GPRS (General Packet Radio Services, the so called 2.5G mobile networks) available in January 2001 carrying up to 64kb/s. Finally we will

arrive in 24 months at UMTS (Universal Mobile Telephony Systems) at a staggering 384kb/s.

Who is going to be foolish enough to believe that these mobile networks which span the globe without the need for civil works, wiring, line-of-sight, radio licences, fixed camera positions and fixed monitoring positions, will not impact on the CCTV industry in Australia in a significant way?

But what about the running and monitoring costs - how will these be impacted by the new technologies? Since the monitoring positions can now be wireless, and flexible to allow for reception on small palm devices that fit in your pocket, the requirement of an expensive fixed monitoring room is diminished.

People can monitor video transmitted from anyplace to

anywhere - a CCTV dream.

There are already units available on the market that arrive in a simple shoe box size containing both the 6" colour dome camera GSM transmitter as well as a colour palm PC GSM receiver. At under \$3000 retail (including both ends) the customer self-installs the colour camera into the ceiling of his/her shop, home, or office, plugs it into the telephone socket and switches it on. Then from anywhere in the world they watch through a colour palm PC receiving at 5 frames per second (the visual cortex requires 17 frames per second for virtual live video).

These prices are likely to tumble to around \$1000 in the next 6 months including both ends and thus flexible CCTV systems that monitor from anywhere to anyplace will be available to consumers. As we know, the domestic and small retail markets - the holy grails of the CCTV industry - have evaded penetration by our industry. You can put cameras in your home but who's going to watch them? At last, the technology is there to enable an incredible breakthrough in terms of price and flexibility, allowing commercial forces to do the rest.

So where is this technology at the present moment? The world's first town centre surveillance system providing evidential quality pictures but running entirely over GSM is now operating at Monmouth in Britain.

Orders are being received for entire country borders. These GSM cameras include statics and PTZs with full reverse telemetry, and both PC and palm PC colour monitoring. Solar panels from Brisbane based Enertec Pty (www.enertec.com.au) allow the cameras to become completely stand alone in the warmer climates and such cameras are now operating in the Middle East and Australia.

Next summer will see the release of low end domestic and retail GSM camera systems mentioned above (dome and boxed solutions) in high street outlets throughout Europe, and successful trials have just been completed in Sweden (by Swedish Telco, Telia) and the USA (AT&T Wireless).

Looking ahead companies such as Lucent Technologies (owners of AT&T Bell Labs) are already offering video for 2.5G (GPRS) and third generation (3G) mobile networks. In early February 2000 it demonstrated 15 frames/second CCTV PTZ 'SkyCam' cameras multicasting over a 64kb/s bandwidth of a full UMTS network at the World GSM Congress in Cannes. Impressive stuff! **SEM**