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INQUIRY INTO NSW TAXI INDUSTRY

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SAY SECURITY PTY LTD

TO THE

SELECT COMMITTEE ON THE NSW TAXI INDUSTRY

OF THE

LEGLISLATIVE COUNCIL OF THE NSW PARLIAMENT

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Taxi Security Camera Systems,
The TAXI industry's next --- Smoking Gun

From the advent of the "Digital Video Recorder" back around 1996, the old performance specifications of the Video Cassette Recorder (VCR) were meant to be replaced. Well that was the attitude and resolve for the Security Industry at large.

But it seems this is not the attitude or resolve from the perspective of the Australian Taxi Cab Regulators

To highlight and emphaise the issues and reason why; we first need to gain a little understanding of the technology behind the recording of images from a CCTV camera. In Australia we use the PAL format for video images which denotes "live" or "continuous" viewing equals 25 images per second from the camera, thus is goes that to re-view live images they must be recorded at 25 images per second.

Recording at 25 images per second has never been an issue, what has been an issue is the storage media available (VHS & BETA tapes) could only store 3 hours of live recording.

While this was sufficient for home use, the security industry required far greater recording times from days to weeks; as such the Time Lapse VCR came into being.

The Time Lapse VCR could be programmed to record images at a pre-determined time interval thus extending the duration of a 3 hour tape. The traditional time lapse modes were 12, 24, 48, 72, --- 960 hours.

There was of course a trade "off" by taking fewer images over a longer time.

Mathematically it looks a bit like this;

Real Time = 25 images per second for 3 hours

12 hour mode = 12 images per second for 12 hours

24 hour mode = 6 images per second for 24 hours

48 hour mode = 2 images per second (rounded down) for 48 hours

72 hour mode = 1 image per second (rounded down) for 72 hours

At this juncture it should be remembered that a Time Lapse DVR could record 1 image per second and store for 72 hours.

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Although the first taxi camera systems we designed an implemented in WA, what could be considered the first "digital camera specifications for a taxi system were released in 200"1.

While these specifications were minimal in design they did at least specified recording of 1 image per second from each camera and the taxi license holders and operates would have expected these specifications could be built on and enhanced as technology advanced. But alas it seems not.

After reviewing past and "current" camera system specifications from around the country one must ask;

"Have the Taxi Regulators of Australia taken the taxi industry forward with technology or have they actually gone backwards in terms of technology"?

It goes without saying that recording and storage technologies have progressed at a lighting speed from 2001 to 2009 in fact back in 2003 the standard off-the-shelf DVR was recording 4 camera at 25 images per second each (100 in total) and could store these images for a month.

Now that we understand that back in 2005 the old Time Lapse VCR was recording images at 1 image per second and storing these for 72 hours. That is a total of 270,000.00 images.

Then the new DVR were recording at 100 images per second and storing for 1 month.

With this new found knowledge we need to re-visit the largest ever tender for supply and install of camera systems in taxis in Australia.

On 6 October 2004 the Queensland Government announced it would fund the supply and installation of Security Camera systems in taxis in the 12 major urban areas of Queensland.

Of particular importance here were the required performance standards for the "Digital Video Recording system. Just two of which are;

"During the journey each camera shall take images at a minimum rate of one (1) image every ten (10) seconds.

"The system shall be capable of recording a minimum total of twelve (12) thousand images per camera during normal operation"
Remember the old Time Lapse VCR recorded at 1 image per second and stored for 72 hours, so the tender called for a system at least 10 times slower than a Time Lapse VCR.

"Are the Taxi Regulators of Queensland living in a world of technology mediocrity"?

On 9 September 2005 the Premier and Minister for Transport and Main Roads announced VerifEye Aust. Pty Ltd had been contracted to supply and install some 2700 security camera systems in taxis stating;

VerifEye met the objectives of the project including the best mix of price, product and service with a technically superior product with superior image quality and clarity. We wanted the best product to protect taxi drivers and passengers. After all, the extra quality might make all the difference when trying to get a court conviction.

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Hello, a system that records 10 times slower than a Time Lapse VCR is the "Technically superior product" Surely if the Government wanted the best product for the taxis then it would have been a Time Laspe VCR!

But why worry about this, after all the Government paid from them! BUT

Then on 28 December 2006 the Queensland Government further committed expansion of the program to include regional and remote locations in Queensland.

Then on 27 April 2007 the mandatory areas were subsequently expanded to all 20 taxi service contract areas.

This is where it can get sticky as late in 2006 the government stated "for all new taxi licences issued after 31 December 2006 in the mandatory areas that the taxi be fitted with a taxi security camera system at the Taxi Licence Holder or Operators cost.

Did the Queensland Government issue a new tender so as to allow for advanced technology to be submitted …we think not.

By not issuing a new tender the Queensland Government effectively removed the buyer's freedom of choice and forced the taxi license holder or operator buy from one source. Is this consistent with the laws of Fair Trade?

By not issuing a new tender the Queensland Government effectively stopped commercial competitiveness in the market place. Is this consistent with the laws of Fair Trading?

On top of that the Queensland Government has provided for a penalty of $3,000.00 for not fitting and approved TSCS.

Surely this must paramount to a restriction of trade for every security system provider in Australia as they have been prohibited from tendering for taxi systems in Queensland. They cannot even submit their respective products for approval as the Queensland Transport Department will not accept them for evaluation.

Someone in VerifEye must have done some serious Government lobbying as this has all been completed at the expense of the safety and security of the drivers and the public when we consider Mobile DVR systems today can record every camera at 25 images per second continuously and store for 31 days and they do not require any downloading as the VerifEye system does!

Note for the Queensland Taxi License Holders and or Operators;
From December 2006 you have been forced to purchase a system that can only record at a maximum of 8 images per second (spread over all cameras) and store images for only 72 hours when other "off-the-shelf" systems that record at 100 images per second and store for 31 days have been available all this time.

From Queensland we travel south to Victoria where the Victorian Taxi Directorate rules the roost.

The VTD has recently released their latest Function and Performance Specification for a Taxi Safety Camera System 2009, which make interesting reading.

The opening introduction states;

1.1 Scope
1.1.1 This function and performance specification identifies the minimum requirements that a Taxi Safety Camera System must meet to be supplied and installed into Victorian taxis from 1 February 2010.

How can this be stated when the VTD have no formal product approval requirement or process?

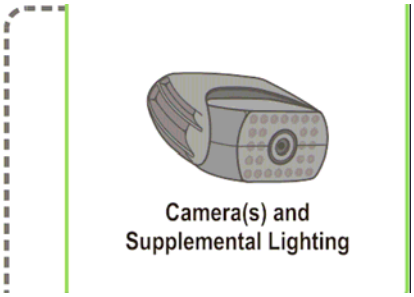
Then it is noted;
Camera System Operating Modes The Camera System shall have four Operating Modes.
1. **Powered Off Mode.** This is where the Camera System has no power and needs to boot when power is first connected to become operational.
2. **Operating Mode.** This is where the Camera System is operating normally and is capturing images that meet image quality requirements at the prescribed image capture rate.
3. **Sleep Mode.** This is where all Camera System functions have shut down except for monitoring the Door Sensors and Ignition. In Sleep Mode the Camera System is not capturing images.
4. **Fault Mode.** This is where the Camera System is not fully operational, which may include being completely inoperable.

It must be stated that these features are product specific and we must wonder how they can be included.

5.9 The Camera System with all components shall have a minimum MTBF (Mean Time Between Failure) of 50,000 hours (excluding careless or wilful damage).

50,000 hours is 5.7 years which is 2 or 3 years longer than any current product warranty available as such all systems fail.

Figure 1 on page 7 shows a system drawing which we believe to be “product specific” and even shows a camera from that product;



How can a Government department use product specific drawings and pictures in an open specification? It is our belief that the entire drawing was provide to the VTD from a supplier.

2. In Operating Mode shall display a Green LED, static display. In addition, when in Operating Mode the following LED displays shall occur:
a. Upon entering Operating Mode the Red LED shall flash twice,
b. If the Camera System is not collecting images due to image download or technician service the green light shall not be displayed;
3. In Fault Mode shall display a Red LED, oscillating flash of not less than 250 ms and not greater than 500 ms; and

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4. In Powered Off Mode shall have no LED display.

Again these are product specific; this is just too blatant to go unnoticed and can prohibit any other system from gaining any form of approval.

Figure 2 on page 11 is also product specific.

12.1.2 The Camera System must operate in a continuous recording mode. A continuous recording Camera System is one that records images on a fixed periodic basis independently of any external trigger. However, the Camera System is required to monitor specific tag events by means of connections to appropriate status points in the vehicle electrical system. >

The definition "A continuous recording Camera System is one that records images on a fixed periodic basis independently of any external trigger."; is technically incorrect in that a system that records on a fixed periodic basis is a TIME LAPSE recorder. There are three main forms of recording;

1) Continuous: where all cameras are recorded at 25 images per second per camera.
2) Time Lapse: where all cameras are recorded at fixed periodic intervals.
3) Trigger Based: where images are recorded only upon a external trigger being activated.

12.1.3 The system shall be capable of continuously recording images for a minimum of seventy-two (72) hours)[2].

With the preceding in mind this means that the system must record 25 images per second continuously from each camera for 72 hours.

12.1.5 The maximum time interval between recording any two images per Camera is one (1) second. There is no specified minimum time interval between recording any two images. Optionally, any Camera used to provide a view of the driver's exterior door area only needs to capture images while the vehicle is stationary or near stationary.

Hello, with 12.1.3 and 12.1.5 it seems we have now gone back to the standard specifications for that old fashion Time Lapse VCR.

Where have the VTD advanced their system requirements from 2001 up to 2009? The answer is simple; the favored system cannot perform above these specifications.

12.1.10 The camera shall capture monochrome images. The use of colour images is permitted, subject to the camera providing an equivalent image resolution and quality to that of a monochrome camera in normal lighting conditions and the camera reverting to monochrome operation in low light conditions.

Why would anyone specify Monochrome cameras in 2009? The answer is simple, the favoured system cannot record colour cameras.

There are many other things to note in these specifications. They just go to show that the taxi regulators do not fully understand what is available on the open market and seem to follow the information from current industry suppliers.

Again, it is the Taxi License Holder or the Operator that must ensure the system they buy conforms to these (product specific) specifications and again there are no formal product approval process and there are no penalties for manufacturers who provide false or misleading information on the performance of their products.

Are the Taxi Regulators of Victoria really serious or only justifying their existence by writing these outdate, product specific specifications? This is surely technically irresponsible.

Now we travel to NSW and look at their latest released specifications.

Again the question that needs to be answered is "is the NSW Taxi Industry being held to technical ransom by the Transport Operations Division and the Regulators"?

We note the Passenger Transport (Taxi-Cab Services) Regulation 1995 "Order Pursuant to Clause 7B (5) which provides for minimum requirements for a security camera system which was gazetted in July 2001

From here it cannot go unnoticed that since these specifications were gazetted back in 2001 that the NSW Taxi Regulators have failed to keep these specification up to date as technology has evolved. Apart from some minor adjustments to recording speeds not much as changed.

Since 2001 there have been numerous studies, surveys, undertaken and a myriad of recommendations made that reference the upgrading of the performance of these specifications, but nothing has been done.

We then note the Taxi Driver Security Survey undertaken by TAVERNER Research back in Aug 2007.

This survey was a precursor to the Taxi Industry Safety & Security Task Force final report (chaired by Madden).

It is further noted that the ATDA submitted a formal response to the TAVERNER survey making some two pages of technology recommendations for the betterment and advancement in taxi security systems. This report was concise and well worded to highlight technology that was available to create a world leading system.

Of substantial importance it is noted that the "Madden" report omitted extremely important data which was contained with the Taverner survey. This data related to the drivers feelings towards technology being used in security systems.

In particular we reference;

4.8. Do drivers want proposed safety initiatives?

Drivers were asked about a number of safety initiatives currently under consideration by the Taskforce. Some of the initiatives required an explanation before drivers could agree or disagree with each proposal. Appendix I shows the full explanation and the questions drivers were asked about each initiative. Figure 15 shows the majority of drivers agreed that each of the initiatives, with over nine in ten supporting a public education campaign (94%), regular improvement of technology (92%) and regular meeting between local police and taxi industry representatives (91%).

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Figure 15: Agreement with proposed safety initiatives

Public education 27% 72%
27% 78%
32% 75%
25% 76%
23% 83%

70%
Strongly agree agree
94% campaign
Regular improvement
20%
92% of technology
Regular police 91% meetings
Improved driver 88% training
Pre-pay laws
More secure taxi ranks
Two M13 alarm
switches
More taxi voucher
schemes
Camera screens
Implement police stop
schemes 32%
22%
34%
27%

While all initiatives appear popular with drivers, less than half 'strongly support' more taxi voucher schemes (43%), camera screens (45%) and a police stop scheme (38%). Table 7 shows the level of agreement with safety initiatives in various locations. Sydney and Wollongong drivers show stronger support for more secure taxi ranks, camera screens and the police stop scheme. There is more support for pre-pay laws and taxi voucher schemes in the urban centres than non-urban areas.
A public education campaign, regular police meetings and improved driver training are strongly supported in all areas.

Table 7: Percent agreeing with proposed safety initiatives - Location

Public education campaign 94 95 93 93
Regular improvement of technology 93 90 91 88
Regular police meetings 91 92 95 90
Improved driver training 88 88 88 87
Pre-pay laws 82 88 86 **79**
More secure taxi ranks **79** 76 **83** 70
Two M13 alarm switches 79 69 73 74
More taxi voucher schemes 75 79 76 **64**
Camera screens **76** 58 **77** 55
Implement police stop schemes **74** 63 **71** 57

We then jump forward to May 2009 when the Transport Operation Division released a new set of (draft) minimum specification for taxi security systems.

We then jump to September 2009 when the Transport Operation Division released the "Final Draft Specification V2".

The TOD requested industry feedback on these Final Draft Specifications. We meet with the TOD and submitted our 8 pages of errors and omissions which were received with "lip" service.

When we requested a second meeting some days later to discuss further items of question we were told "there will be no second meetings granted as we have all the information we require"

What made these guys experts overnight whereby they do not require input from a person who has been involved in the electronic security market for 35 years ????

Following the release of the "new" final draft "Taxi Security System Specifications ver. 2, it appears that the Transport Operations Division of NSW Transport & Infrastructure has a propensity to forego technology advancements in favour of commerciality.

When questioned as to why they did not write specification that eliminated outdated and inferior technology they responded "we do not intend to commercially disadvantage any existing supplier"

This tells us one thing….the existing suppliers cannot provide today's technology and are being favoured by the department over current technology.

This flawed and inadequate Version 2 Specifications also preserves and consolidates the powers of a Taxi Network, without any obligation on the network, financial or otherwise, to perform and we are left to wonder why?

At issue, from the taxi driver's point of view is that technology is an available and affordable means of providing a security system which proactively reports and actively causes response to a variety of security issues.

Without any regard for increasing the protection of drivers and the public, the Ministry, in determining these limited and inadequate specifications to at best, a partial system is abrogating its responsibilities, and reverting to a twenty years old scenario, where, at most, the perpetrator who murders a cabbie might be identified. Anything less is of minimal concern.

To provide for the range of security issues which confront the taxi driver each and every shift, requires a security system for 2010. It also requires a system which protects by default the taxi passenger.

It needs to be noted with some importance that the system as specified in Ver.2 is at best minimalist in nature and performance and systems of these specification have not been in use in the general security industry for 20 years, so why are they being specified for use in public transport vehicles such a taxi cabs? After all Sydney buses have had far better system since 2006.

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All the current CCTV surveillance systems being used in the taxi industry come from three major suppliers and the general security distributor does not stock anything with such a low performance specifications.

Current NSW TSCS specifications calls for recording of 1 image every 10 seconds as background recording and 1 image per second on trigger activation. And these systems are only required to store a maximum of 80,000 images.

Hello, we are still using recording speeds that are 10 time slower than the outdate Time Lapse VCR of 1996

Any Police department in Australia will tell you that 1 images every 10 seconds is not enough information to provide conclusive proof of who did what to whom

Worse than this is the fact that the TOD has determined that when the driver is under attack and activates his “duress alarm” the security system is only required to record 1200 images then it can stop recording.

How can any Government department specify that a security system STOP recording when a driver is under attack, surely this would be a criminal thing to do?

Of other concern is that the specifications contain performance features that are “specific” to one particular product and one must wonder how can a Government department specify a particular product.

Let’s look at some features of latest technology;

Current technologies provide Digital Video Recording systems that can take up to 4 cameras and record at 100 images per second. These systems can store upward of 200 million images.

So again we ask; why is the Transport Operations Division of NSW Transport & Infrastructure not showing a proactive approach to the security of drivers and passenger by specifying modern and up to date technology?

While the general security products distributor can supply “off-the-shelf” systems far in excess of these specifications number in the 20’s we wonder why the Transport Operations Division of NSW Transport & Infrastructure has included two clauses in to the Taxi Security System Specifications that are product specific to the current low performance systems.

Maybe they have the intent to preclude these other more modern systems that can be supplied from companies other than those operated by a network being approved?

Is the reluctance by the Transport Operations Division of NSW Transport & Infrastructure to upgrade the performance of the Taxi Security System Specifications driven by the fact that several of the currently available systems are in fact supplied by particular Taxi Networks or is it because Cab Charge are reportedly investing in one other major supplier of Taxi CCTV Systems ?

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Why is it that the Transport Operations Division of NSW Transport & Infrastructure pays for outside consultants (who are NOT licensed under the Security Industry Act) to write specifications (and limit the performance) that will form part of a regulation when they have;

No formal system approval process

No formal penalty process against a manufacturer for making false declarations about their product.

No relevance to today's technology

What this actually means is that we have 6000 plus taxis with non-approved systems installed and it is all the fault of the owners and operators!

Why is it that the Transport Operations Division of NSW Transport & Infrastructure places the burden of proof that the system does in fact comply with the specification back onto the taxi operate who, for all intensives purposes has absolutely no technical understanding of what a CCTV system actually is.

Why is it that the Transport Operations Division of NSW Transport & Infrastructure does not include any reference to the Security Industry Act within their specifications when in fact this Act governs the supply and installation of CCTV systems within a Taxi?

When questioned about this they responded "This is not our Act and we do not have to reference it"

What a load of rubbish; if they do not reference a state ACT then surely the DOT is complicit in the breaching of that Act.

How can to TOD approve companies and persons to be download agent etc when these companies and in fact not licensed to perform those duties?

We can identify at least 26 companies in NSW who are NOT LICENSED under the Security Industry Act.

In brief the NSW Act states;

Security Industry Registry

Introduction

The performance of security activities in New South Wales is now governed by the Security Industry Act 1997 and Regulation. The new laws, which came into effect in July 1998 have been designed with the clear intention of providing the community of New South Wales with confidence in a professional security industry where competency (training), integrity and accountability are provided and maintained to a high standard.

The Security Industry Registry of the NSW Police Force is responsible for the administration of the Security Industry Act, 1997 and Security Industry Regulation, 1998.

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The most significant aspects of these laws are:

- *Licences have been placed into three groups.*

  Master licences for employers and principal training organizations.

  Class 1 licences for manpower services.

  Class 2 licences for technical services, sales and training.

- *Holders of Class 1 and/or Class 2 licences may only work for a Master licence holder.*
- *Master licence holders must be a member of an approved Industry Organization.*

The Security Industry Act 1997 makes it an offence to provide certain private security services without a Master Licence. This Act is enforced by the NSW Police.

Currently we have only identify 3 companies in NSW that supply and or install CCTV systems into taxis that fully comply with the Security Industry ACT by holding a Master License and their employees hold subcategory licenses.

To our knowledge no taxi network actually holds a master license but openly market the supply and installation of camera security systems.

What this means in real terms is that 99.9% of the 6000 plus CCTV systems currently installed in NSW taxis have been done so in breach of the Security Industry Act.

Penalties for a breach of the Act range from $100,000.00 for a corporation to $ $$$$$ for private individuals.

This raises another more important fact, why is it that the Security Industry Registry has not carried out its duties under their charter and identified this massive breach of the ACT which has resulted in approx A$18 million worth of product sales and installation works in NSW taxis ?

It should be noted at this point that every state in Australia has some form of industry regulation for the supply and install of CCTV systems. As such we are left to wonder who many other system have been installed illegally and with full knowledge of the Taxi Regulators in each state.

For Victoria and Queensland it must also be noted that the installation of security camera systems in taxis is also covered by a requirement for the seller and installer to be licensed.

As such the three state Regulators surely are complicit with these companies's breach the respective Acts. Sth AU do have this covered and QLD are currently re-vamping their specification which we have on good authority will include license requirements.

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Out of this research comes a very concerning inconsistency within the respective states Transport Departments when it comes to Buses and Taxis.

Western Australia, South Australia, Victoria and NSW all have video security systems on their buses.

The performance specifications for these systems so are far advanced of these being touted for the taxis one wonders if the taxi regulators have placed taxi drivers at the bottom of the food chain and not worthy of the high standard as they get for the buses.

Or is it that the buses are not influenced by the industry they serve?

It must be noted here that the STA released CCTV specifications for Sydney Buses in Feb 2006 and the requirements for the DVR systems was;

2.4 Minimum Standards
Any system to be supplied must comply with the following minimum standards.
(a) Up to 24 Hours continuous recording whilst the Bus is switched on – no operator intervention required.
(b) Time and date stamped recording with 7 Day battery back-up.
(c) The design shall incorporate a fail to safe methodology in relation to power supplies, general operation and all other aspects of installation.
(d) High quality, low light, black and white camera.
(e) Tamper resistant dome housing with shake proof camera mounts.
(f) Two Separate Infra-Red illuminators for night time operation.
(g) Housed in secure steel cabinet with restricted profile lock.
(h) Five Programmable Inputs.
(i) Five Programmable Outputs. (A 15 Minute delay timer for duress functions).
(j) LED Flasher to provide indication of system operation.
(k) Readily available connection point for the connection of a hand held monitor for system inspections.
(l) The DVR must be located in a secure environment taking into consideration the environmental conditions and must be secured from damage by fire, immersion in water, vibration, shock, explosion and tampering.
(m) The image must be embedded with the actual date and time recorded including recognition of daylight savings time.

As such the Transport Department was well aware of what was available "off the shelf" for digital video recording systems back in 2006 so why weren't the 2009 taxi specifications upgraded?

The bottom line here is that the responsibility for taxi camera system design and specification should be taken out of the hands of inexperienced persons within the TOD and given over to a responsible body such as COAG who can co-ordinate a national approach to a nation problem and then the taxi industry can have one set of standards and specification "nationally" rather than the dis-jointed and flawed 5 sets of different camera specifications that only serve to provide the regulators with self gratification and allow them the thrust their perceived power onto the owners and operators and the system manufacturers, with total disregard to modern technology.