

Getting microchips right

Ian McBryde and Dick Murray

ABSTRACT

The challenge for urban animal management (UAM) has always been to find a recipe that *does* effectively bind together scanners, registries, implanting and microchips themselves into an ‘open’ national system that does the job. Australia desperately needs a nationally coordinated microchipping system. The requirements of such a system must principally accommodate backward compatibility, national ‘open use’ perspective, device performance criteria and registry control. It is one thing to microchip pet animals — pretty much *anyone* can do that. To create a system to reliably link a microchipped animal to its owner ie. to identify pet animals *by* microchip — *that* is a very different story.

The bottom line, when it’s all been said and done, is simple: It is not good enough that microchips should just *promise* to provide lifelong and reliable pet ID — they have to actually *do it!* More and more consumers are demanding that those responsible for the regulation of microchips should start delivering. Ten years of systematic dysfunction and failure is enough for anybody.

INTRODUCTION

Claims of microchip and microchip registration system failures have become so persistent that they can no longer be ignored. The challenge for UAM has always been to find a recipe that *does* effectively bind together a wide range of microchip scanners, microchip registries, microchipping procedures and indeed microchips themselves into an ‘open’ national system that ensures microchip functionality. For a while there, the rate of progress was negative.

It is one thing to microchip pet animals — pretty much anyone can do that. To identify pet animals by microchip — *that* is a very different story.

The difficulties associated with the use of microchips for pet animal ID seemed insurmountable. Things were getting worse more quickly than they were getting better. There reared the prospect of different states using different non-compatible technologies. But then in the late ‘90s the penny finally dropped.

The microchip is not a silver bullet. Microchips do not possess some kind of magic that ensures good results even under conditions of gross misuse. The microchip is an electronic tag. It is a tool — and like all tools, it has to be used competently. Microchips have the potential to be either a boon or a blight. The difference lies in how they are used.

Those who have got the chemistry all wrong are starting to stand out. Those, on the other hand, who are getting the chemistry right are starting to shine.

It is one thing to microchip pet animals — pretty much *anyone* can do that. To identify pet animals *by* microchip — we all now know, *that* is a very different story.

Over the past 10 years, there has always been one main thing with microchip use that everyone unfortunately has kept ignoring. This one *key thing* is the simple but paralytically obvious fact that people and their pet animals freely and continuously move about all through this vast country of ours. The place where the microchipping is done and where the data is logged in the first place is *hardly ever* going to be the same place that has to try to track the owner via the electronic tag ... if and when the need should ever arise.

The dog that lives in New South Wales this year is very likely to be living in Western Australia in a couple of year's time. The reverse is also true and both scenarios occur continuously a thousand times over with every state and every municipality. Unless everyone is 'doing microchips' in a careful and *fully* integrated way, the chips will *always* continue to fail to reliably link animals and owners.

Australia desperately needs a *nationally coordinated* microchipping system that addresses the full necessary range of critical requirements on which an effective application of this ID technology depends. The requirements of such a system *must* principally accommodate the key issues of backward compatibility, national 'open use' perspective, microchip and reader performance and registry control.

More and more consumers are demanding that those responsible for the regulation of microchips should start delivering. Ten years of systematic dysfunction and failure is enough for anybody

While the idea of using microchips for pet ID has always been a good one, the practice of coordinating chips, scanners, registries and implanting procedures has proved to be more challenging than anybody ever imagined. The bottom line, when it's all been said and done, is simple: It is not good enough that microchips should just *promise* to provide lifelong and reliable pet ID — they have to actually *do it!*

RISK OF FAILURE

During the Hobart (August, 2000) UAM conference workshops on microchips, delegates were asked to list circumstances they had experienced or circumstances they could expect in which microchips might fail to link animals and owners. When the findings of the 2 separate working groups were pooled, the conference found that an astonishing 76 'link failure' possibilities had been identified.

These potential microchipping failures could be grouped under the following headings:

microchip failures (8);
scanner failures (12);
implanting failures (16);
registry failures (27);
owner failures (6); and
general failures (7).

Each group is a problem area, but registries stand head and shoulders above the rest.

The 'failure to link' workshops were a sobering experience. It is obvious that microchips are a fragile means of companion animal identification unless they are used within an overarching framework of mandatory standards that serve to secure the

integrity of this application. There can be little reason to doubt that failures to link are actually happening. This is bad but what is worse is that the vast majority of failures could and should have been prevented. More and more consumers are demanding that those responsible for the regulation of microchips should start delivering. Ten years of systematic dysfunction and failure is enough for anybody and it is time to get a 'safeguard system' in place to prevent the failures.

THE HOBART RESOLUTION

The Hobart conference delegates universally agreed that the proposed South Australian model is just such a 'system' standard. While microchips may always struggle as an effective means of *mandatory* pet registration, with a proper 4-way system of regulated standards, they can indeed be a good method of owner linking. At the Hobart conference after the completion of the microchip workshops, a conference resolution was (unanimously) passed. This 'milestone' resolution (see conference resolution section below) was a declaration in support of the absolute necessity for microchip reform in Australia. It was also a declaration in support of the approach to microchip reform being taken by the Dog & Cat Management Board of South Australia in developing its new system for the use of microchip identification for domestic companion animals.

The UAM Advisory Group feels that the South Australian approach does, for the first time — at last, provide a workable solution. It does not matter the whether microchipping is for owners wanting to have guaranteed security in tracing lost pets, or for municipalities using electronic identification as an animal management tool, there simply has to be a standard national model and this looks like it. At the heart of the South Australian model is an underscored acknowledgement of the necessary 'four way system' structure. It was accepted by all those delegates at the Hobart conference that unless *all* the essential elements of the 'trilogy plus one' (scanners, microchips, registry and microchipping centers) are included, microchips will never reliably fulfil their purpose of linking animals and owners.

It is important to point out that the SA model offers a framework for commercial entities to participate (and indeed compete as actively as they wish) within a fixed framework of mandatory quality controls. This allows for market forces to do their thing with the cost and price of the service on an equal and fair basis without jeopardising the value and quality of service or product to the end user — the pet owners across Australia.

CONFERENCE RESOLUTION (HOBART, FRIDAY 3RD NOV 2000)

The UAM movement in Australia supports the approach taken by the Dog & Cat Management Board of South Australia in developing its system for the use of microchip identification for domestic animals.

UAM recognises the essential elements of the 'trilogy plus one' (microchips, scanners, registry and microchipping centers). Microchips cannot fulfil their purpose of linking animals and owners if all aspects of the process are not adequately addressed.

Scanner must be ISO multireaders conforming to ISO 11785 able to read both ISO compliant FDX-B and all types of FDX-A microchips used in Australia (Destron 125kHz, AVID 125 kHz non-encrypted and Trovan 128kHz). A network of these scanners must be established in pounds and shelters, animal welfare agencies, veterinary clinics, local authorities and other places where lost, stray or injured dogs and cats are handled and where microchips are implanted. Each of these places needs sufficient scanners to adequately provide the service.

Once the network of these scanners is in place, the microchips used should be FDX-B transponders complying with ISO 11784. However, it is imperative that existing FDX-A technologies be used until the network has been upgraded to ISO capability.

Microchip centers should be accredited only if they meet the standards of the Australian Veterinary Association guidelines. This covers operating protocols for implantation, scanning and recording information.

Registries must comply with Domestic Animal Registries Inc. (DAR) protocols. Microchip suppliers must provide an audit trail of their products to the registry. The registry is the guardian of the system from which failures will be detected and addressed.

Microchips and scanners must meet the performance standards developed by the Dog and Cat Management Board. UAM recognises that these standards are essential to the integrity of any microchip identification system.

UAM commends the approach taken by the Dog and Cat Management Board and feels that this provides a framework for other authorities to follow in the regulation of microchipping, whether it be for owners wanting to trace their pets, or municipalities using RFID as a tool in animal management.

PROGRESS IN SOUTH AUSTRALIA

The South Australian microchip model is progressing much more slowly than anticipated and this has been partly due to the dollars required to proceed with the testing. The testing is well underway and preliminary results should be available at the conference. The 76 'failures-to-link' identified by Hobart UAM conference delegates are catered for within the SA model and it's looking good. The beautiful thing about what's happening in South Australia is that no microchip product or service can get off the ground in that State unless they comply with the Dog and Cat Management Board's statewide 'system' of microchip application. It is going to be difficult for anybody to sell microchip products into South Australia unless they measure up and fit in properly.

If you are in the business of UAM and you are mixed up with microchips, the following is a pretty straight forward check list that you can easily go through to review the integrity of the system you are using.

THE MICROCHIPPING SYSTEM CHECK LIST

The following series of questions constitute a very simple but also a very rigorous microchipping system audit.

If the answers to *all* of the first 5 questions are in the unequivocal affirmative you are OK. If *any* of the answers to the first 5 questions are negative, then you are auditing a dud/defective system.

Operators, councils and state governments that persist with faulty (non-compliant) microchipping systems can not guarantee reliable animal-owner linkages. Worse than that, they are continuing the kind of dysfunctional rot that has been crippling this UAM application all along.

The 6th question below is cautionary rather than obligatory. When a government authority introduces mandatory laws that involve the ID of pet animals by microchip, that same authority automatically assumes total responsibility for guaranteeing the reliability of the supporting 'microchipping system'. If a genuinely reliable

1. microchip;
2. multi-scanner network;
3. microchipping technique and data logging procedure; and
4. registry management and registry linking program

is not firmly in place throughout the whole jurisdiction, it is risky to even recommend microchipping. If the support system is not firmly in place, it is just bad government to make it mandatory. There are still a lot of big holes are out there just waiting to be stepped into. For the time being, mandatory microchipping is a province where angels still fear to tread. Be warned.

These are the key questions:

1. Is there a *complete* multi-scanner network in place with scanner units permanently available at *every* pound, shelter, microchipping centre and local authority in the entire area of operation?
2. Are *all* the scanners in that scanner net 3-way capable ie. able to read both FDX-A conventional chips plus FDX-B (ISO chips)?
3. Are the microchips either FDX-A or FDX-B transponders complying with ISO 11784 and having an approved ICAR number applicable for Australia?
4. Is the registry (database) DAR accredited?
5. Are *all* places where scanning, implanting or data recording is carried out, operating to the standards set out in the AVA's microchipping centre protocols?
6. Is this microchipping scheme a *voluntary* as distinct from mandatory option for the pet owners?
7. Are there any quality standards in place to ensure the microchips can transmit an adequate distance and the scanners can read them.

CHIP AND SCANNER STANDARDS

These are still under testing and development. There may be some surprises in relation to the way we use them and hopefully there will be some useable hard data by the conference.

DOMESTIC ANIMAL REGISTRIES (DAR) PROTOCOLS

The States having autonomy in many areas always complicates a national approach in Australia. Thus, in many cases, Federal Legislation is only valid if agreed upon by all the States and we all know how good that cooperation is. Therefore an organisation such as DAR becomes necessary and ideally can be entered into progressively by all the states, circumventing the need for federal legislation and providing adequate controls all within the private sector — seemingly the ideal from the powers that be.

Domestic Animal Registries is a body incorporated in Victoria as a cooperative approach by the AVA (Vic), Cat Protection Society and the RSPCA (Vic) through mutual concern regarding the effective management of data surrounding microchip identification.

This body and its' protocols are an essential part of the microchip approach being taken in South Australia. They set out minimum conditions for the design, management, control and operation of a registry.

The protocols themselves are set out under a number of headings starting with a preamble, objectives and some general considerations. The issues then dealt with include:

1. Who owns the information
2. Security for the information
3. Recording of the information
4. Updating the information
5. Access
6. Accuracy
7. Backup
8. Integration with other systems/registries
9. Service provider.

Each of these areas is covered in some detail and some features are listed below.

The ownership of the information remains with the owner of the animal unless this is over-ridden by State legislation.

It expresses that the identification and registration details are public domain and therefore accessible to authorised people (eg. veterinarians and Council officers) by using a personalised access code. However large volume data retrieval would only be permitted with written permission from the Association (DAR). Any others who wish to access the data would need written permission from the Association (DAR)

The data must be presented on the approved form and signed by the owner and then recorded on the register by the registry within two working days of receipt. The minimum data to be recorded is also specified for owner, animal and implanter. There must be provisions to cross link owners and animals and to allow joint ownership and ownership of more than one animal. The data must be kept for the life of the animal as a minimum. Confirmation of the original details and change of details forms must be provided by the registry to the owner.

There must be methods for updating or changing the information as animals change owners, their owners move house and they become desexed or the implant may stop functioning and be replaced.

There must be easy access to the database at all times and the registry must be staffed 24 hours per day 365 days per year.

Accuracy is imperative and this is enhanced by audit trails of the placement of microchips provided by suppliers of microchips.

The records must be electronically maintained backup systems to protect data. A backup of the entire data base must be stored off the premises in a safe deposit box regularly. There must be communication between all registries signed on to DAR.

People of proven integrity and competence must run the registry.

As you can see these protocols cover all foreseen registry problems including all those raised at the 'Failure to Link' workshops in Hobart 2000.

The DAR protocols also cover a number of areas not considered by the failure to link session. These include the privacy issues and who has access to the data and there not being a restriction for those with a legitimate use for read only purposes. The security of the information including in the event of bankruptcy of registry is protected.

DAR also conducts audits of the registries which gives them some control over those who do not comply. If the states support DAR then it can in turn support the industry on an increasingly national level.

AVA MICROCHIP CENTRE REQUIREMENTS

The Australian Veterinary Association introduced an accredited microchip Centre system in response to the many difficulties encountered with microchip identification.

This system requires the Centre to have the capacity to read all chips commonly used in the Australian domestic animal market, ie. Destron, Avid (non-encrypted), Trovan and ISO chips.

The Centre must have a system for reading chips, which includes checking the reader is reading first, ie. scanning a sample chip prior to commencing scanning.

The animal must be scanned for all above chips prior to being implanted with a chip.

The chip must be scanned prior to implantation to ensure

1. it is working; and
2. it is correctly numbered with the provided information.

The chips used must be separately packaged and sterile and have a sterile delivery system.

When implanted the implanter must check the skin to be sure it is indeed implanted and the animal must be re-scanned to ensure all is working and in order.

The data must be correctly and carefully recorded and dispatched to the registry.

The registry should be one recommended by the AVA. However having said that it goes without saying AVA would be happy with any registry signed on to DAR and using its protocols.

POLICING RESPONSIBILITIES

Without policing there are no consequences and therefore no trust in the system. The various areas of policing must be within the system with the ultimate responsibility on the entire system being with the regulators who have chosen or regulated for the system. Once standards have been applied then the accredited microchip centres must use the microchips and scanners that meet the standards and not equipment that is sub-standard. The policing of the centres is done by a regulatory authority conducting audits and the registry controlling the chips that are registered. The registry cannot accept newly implanted chips that do not meet the standard set. This means free competition between companies as long as their product meets the standards.

The registry is controlled or policed by DAR. DAR conducts audits of its procedures and ensures it is operating according to the protocols. The state regulatory authority controls DAR and that authority would ideally have a representative on DAR. The industry must maintain its standards by regularly placing a number of imported, unopened chips and scanners with the testing body chosen by the state regulatory authority for periodic assessment — this is quality assurance. Ideally this body would be selected by DAR and performs all its tests by the same method thereby producing repeatable results ensuring fairness for the suppliers.

Put simply the registry controls the centres, microchips and scanners, DAR controls the registry and the state regulatory authority is responsible for overseeing the entire arrangement, hopefully with the other states involvement making it truly national and reliable.

ABOUT THE AUTHORS

Ian McBryde B.Sc. BVMS
Veterinary Practitioner
Salisbury Highway Veterinary Surgery
130 Salisbury Highway
Salisbury SA 5108
Ph. 08 8258 7742

Dr Ian Mc Bryde is a member of the UAM AG and is a member of the South Australian Dog and Cat Management Board.

Dick Murray BVSc, MSc, MACVSc, FAVA
Convenor, UAM Advisory Group and veterinary practitioner
Western Suburbs Veterinary Clinic
176 Thuringowa Drive
Kirwan Qld 4817
Ph. 07 47 734111

Dick Murray has been heavily involved in UAM for about 20 years now. He has been a member of the UAM Advisory Group since its beginning in 1992 and is currently the convenor of that group.

[UAM 2001 Index Page](#)