

# **Electronic identification for pets: the new technology**

**R.H. Smith**

## **ABSTRACT**

Microchip implant technology can help local government to improve urban animal control. This paper covers the advantages of electronic implants, equipment features, the costs and international standards for implants and interfaces. The background to the adoption of the Destron microchip system by Alice Springs (NT) Town Council is presented

## **INTRODUCTION**

Ownership of a dog is a privilege and it confers a responsibility for the animals welfare. Too many owners fail to deliver reasonable standards of care and control; then the dogs become a public nuisance and the victims of their owner's negligence.

The various canine breeds play an important and vital role in society not only as companions but as workers. Urban animal management should be able to provide both man and man's best friend a better deal. Such urban management systems must be effective and require universal dog registrations as an urgent priority. Microchips open a door to effective pet identification.

The microchip has now proven to be tamper-proof and a permanent method of identification. Large scale evasion of registration is the major problem which must be corrected. It is estimated that only a minority of the canine population of between two and five million in Australia ever become registered. This must be corrected.

Usage of the microchip will not increase the percentage of dogs registered if the means for registration evasion still exists. Microchips are a means of identification, not registration. We need better registration systems and I believe microchips can help in this process.

## **MICROCHIPS: How can they help local government in better urban animal control?**

Microchips can provide councils with the means to provide an effective management control system by introducing a differential fee structure, such as a once only fee for microchipping and a lifetime registration or a larger than usual annual fee. The annual fee option could attract greater penalties for such dog owners than those with a microchip because a dog with a microchip can be identified immediately via a direct link to the Council's database.

Councils could increase their revenue from registration and reduce their overheads by rapid identification of impounded dogs. Councils can save money by reducing the impounding days and euthanasia costs. Municipalities in the United States have reduced their pet holding time from seven to one or two days. One such municipality reports that a more than 55% improvement in animal return to owner rate and savings of as much as \$US11 per animal on euthanasia and disposal costs.

Councils and governments can require that all adopted and sold pets must be microchipped, this will help to identify irresponsible pet owners. A major shelter in the United Kingdom found that almost 15% of strays were animals that had been placed in adopted homes.

The microchip facilitates identification of animal's owner in an emergency. When an injured animal requires emergency care a microchip can help find the owner quickly. It generates positive media exposure. Successful pet recoveries generate good press coverage and enhances your image in the community.

Microchip technology offers the following advantages:

- increases the speed with which owners are reunited with their pet
- minimises the chance that their pet will be euthanased if it gets lost without a collar or tag
- minimises trauma and exposure to disease by avoiding overnight stays in impounding centres
- offers one time cost for permanent identification
- provides proof of ownership for valuable animals
- provides safe, permanent ID for cats.

## **THE SYSTEM**

### **The Microchip**

The microchip is a small custom integrated circuit encapsulated in glass. It measures 11mm long by 2.1mm in diameter, about the size of a grain of rice, and consists of three components:

- The first component is a computer microchip which contains a unique 10 character ID number assigned to the transporter and all the electronic circuitry necessary to send the number to the scanner when it is activated by the radio signal.
- The second component is a coil of copper wire wound around a ferrite (iron) core. This functions as a tiny radio antenna to pick up the signal from the scanner and to send the encoded ID number from the microchip back to the scanner.
- The third component is a capacitor used for tuning.

The glass casing is a soda lime glass which has been specially selected for known biocompatibility. The transporter contains no batteries, so there is nothing to wear out.

### **The scanner**

The scanner is a battery powered portable unit that sends a 125KHz radio signal to the transporter which is then powered up and transmits its unique ID code as a radio signal. The scanner receives the signal, decodes it and displays it on a small screen. The change of any two microchips having the same number is one in 34 billion.

### **COST**

The microchip costs in the vicinity of \$7 wholesale and comes fitted inside a needle which is fitted to a syringe; the unit is disposable after implantation.

Scanners cost \$855 for a read and display model or \$1,075 for a memory model that will read and store up to 1,400 numbers in 99 individual files; this second model has a RS232 serial port for downloading to a PC or data collector.

### **THE FUTURE**

Within 12 months we will have an 'intelligent' scanner that will enable councils to download details such as owner, address, telephone number and the unique ID number. This will enable a dog control officer to scan a dog and have all the relevant details of the dog displayed on a screen; the officer can then return the dog to the owner and recover the appropriate fee.

To overcome change-of-ownership problems, by-laws could regulate heavy fines if changes of address or ownership are not notified in a stipulated time.

### **INCOMPATIBLE SYSTEMS**

Councils may be aware of the availability of different systems for animal ID. Destron was the inventor of Radio Frequency Identification and are the world leaders in implantable transponders in animals. Over two million have been implanted in a wide range of animals and over 200,000 in companion animals around the world.

To eliminate this confusion in the market place, Destron and Texas Instruments made an approach to International Standards Organisation to set a world standard. A joint proposal was presented to the Chairman of the ISO Working Group 3 committee who requested them to present the submission to the committee in Belgium on 6 and 7 May 1992. As a consequence the Working Group 3 Committee has made the following decisions:

- The ISO standard should include both full and half duplex technologies
- The communication parameters should be the same to the greater extent.
- The display and communication interface should include common formats.

Only the Destron/Texas International proposal possesses the essential characteristics of the three requirements listed above.

## **PRESENT USE OF THE SYSTEM**

The majority of councils in the Sydney metropolitan area are either scanning their pounds for Destron microchip or having their pounds scanned by contractors. The RSPCA of NSW have chipped and adopted out over 12,000 dogs in the last 12 months and will commence chipping cats very soon. Animal Welfare Leagues of NSW and Victoria are also chipped their adopted dogs with a Destron Microchip. Councils using microchips as a management program include Alice Springs which, after some long investigation, adopted the system.

## **THE ALICE SPRINGS MICROCHIP STORY**

In 1988 the Alice Springs Town Council established an Advisory Committee on Animal Control. The Committee considered the whole range of issues related to the keeping of companion animals in Alice Springs. It was brought to the Committee's attention that many dog owners in Alice Springs did not have the traditional registration disc on their animals at all times and this made it difficult to identify the owners of offending animals, or to return the animals to them in cases where they were impounded.

The committee was also concerned about the impact of cats on the environment and suggested that steps should be taken to control the indiscriminate breeding of cats. The difficulties of introducing a registration system for cats and providing positive identification of owners of cats was one of the factors that was seen as prohibiting the Council from introducing any form of controls in this area.

During these discussions the availability of microchip technology in the form of a subcutaneous implant for the identification of the animals came to the Committee's attention. The potential of the system to overcome the inherent problems with dog identification and also, if considered necessary, cat identification, led the Committee to recommend to the Council that microchip technology should be adopted as an identification device as soon as possible.

At that time the only legal control over companion animals was provided by the Northern Territory *Dog Act*. Regulations under that Act required the wearing of a disc for identification purposes and did not allow for the use of the subcutaneous implant.

It was not until 1992 that the Northern Territory *Dog Act* was finally repealed and the local government authorities were given the power to introduce animal control by-laws. Because of the previous background of discussion and consultation with the Community that had taken place through the Animal Control Advisory Committee, the Council was then in the position where it was able to consider the introduction of by-laws including provisions for the use of subcutaneous implants as its primary means of identification of animals.

The new by-laws came into effect in April 1992. Under the new by-laws the Council offers registration for the lifetime of a dog using a subcutaneous implant and it actively encouraging the acceptance of this form of identification by members of the public. Because of the reluctance of some members of the public to accept this form of identification, the Council has continued to offer as an alternative an annual registration system using the traditional identification disc. The annual registration fee has been set at one third of the price of the lifetime registration fee in the hope that this will be an adequate incentive for people to adopt the lifetime registration with its corresponding efficiencies and lowering of administration costs.

At the time of writing this report the re-registration of dogs is in full swing and it appears that approximately 50% of all dogs previously registered are now being registered for life using the microchip implant. It is believed that this figure will be higher for new registrations.

The Council also has a proposal to extend compulsory registration to all cats that are not sterilised and in this instance the only form of registration available will be for the lifetime of the animal and will incorporate the use of a subcutaneous implant for identification purposes.

In conclusion, the Council has adopted the use of the subcutaneous implant as its basic means of animal identification because of its flexibility, enabling it to be used on cats as well as dogs, its ability to provide for positive identification of animals (to avoid such practices as disc swapping), and the efficiencies that are inherent in the system by decreasing the administration costs involved with animal registrations.

The bonus that the system provides for animal owners is the speed with which the Council can identify lost animals and return them to their owners and the option of having their registration recorded on the Australian Animal Register for nationwide identification and retrieval.

## **CONCLUSION**

Microchips are today's technology and can provide councils with a tamper-proof method of identification that will enhance a universal urban registration management system for dog control.

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Animal Electronic ID Systems Pty Ltd, is an an Australian company that has the exclusive distribution rights for the Destron/IDI range of electronic identification systems throughout Australia and New Zealand. Ron Smith has a rural background and is Chairman of his family management consulting company.

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