# Experts' Position Paper on Microchipping of Dogs and Cats

This is a supporting document of the Report "Billion Euro Industry: why the EU must strengthen regulations to end the illegal puppy trade now", available at www.four-paws.org/billion-euro-puppy-trade

FOUR PAWS thanks Dr. med. vet. Swen Hüther, member of ISO/TC23/SC19/WG3 and liaison officer ISO to the Federation of Veterinarians of Europe (FVE), Eurogroup for Animals, Europetnet, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), expert in the area of electronic animal identification, in particular for injectable transponders and former CEO of the company PlanetID[i], for providing the following information, which is endorsed by further experts in the area.

## When can dogs or cats be identified with a transponder, and is this safe?

**In summary:**

- There is no reason from a medical point of view that the animal shall not be identified earlier than the usual time around eight weeks, when leaving their mother, respecting the rules of the injection site (ISO 15639-1) and the conditions set by ISO 11784.
- For assessing when microchipping can be done at the earliest it is important to respect the size and weight of the transponder compared to the size and weight of the animal, for the transponder 1% of the animal's body weight is being acceptable.
- The transponder technology is in use for 30 years, and safe when used according to the regulated procedure. Details of the procedure are laid down in ISO 11784 and ISO 15639-1. Required for those who inject transponders is a proper education and availability of necessary know-how.

General information:

The identification of a dog or a cat with a transponder is commonly called microchipping. Yet it is essential to note that the correct term for the device inserted in the animal's body is not *microchip*. The correct term for the device is *transponder,* and consists of three components: the microchip, the antenna and the surrounding material composing a capsule smaller than the size of a rice grain.

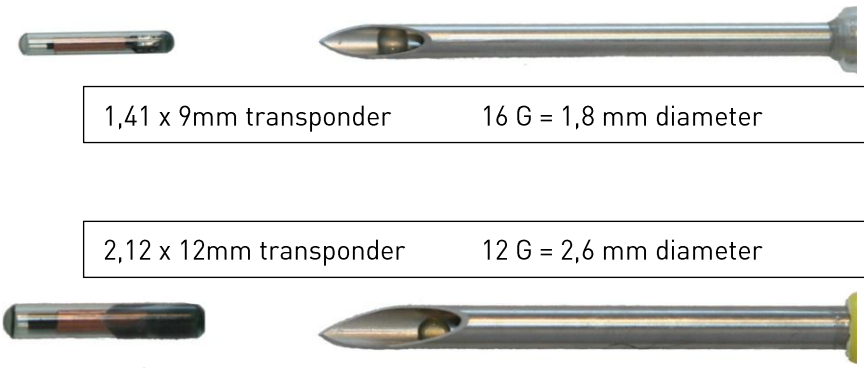
The microchip is a small, electronic silicon chip holding an identification number. This information can be transmitted through the antenna, using a microchip scanner device. The technology has no battery, no internal power source and the animal cannot be tracked and located via GPS. Rather it is a passive device, sitting completely inert in the animal, waiting to be energized and read by a scanner, eventually displaying the microchip number on a scanner's screen.

Transponders are available in different sizes of which those for dogs and cats have usually a size of 2,12 x 12mm or of 1,41 x 9mm. The length might vary (insignificantly) within different manufacturers whilst the diameter will always be a standard of 2,12 or 1,41mm. This is a non-official standard set by the manufacturers of the surrounding material. As injectable transponders are also broadly used for other animal species, there are different sizes available which are not of relevance for dogs and cats.

The cannula is the metal tube in which the transponder is placed prior to the injection. It might be a separate piece that can be attached to an injector or it can be part of a complete injection device. The

cannula has a sharp end which penetrates the skin, carrying the transponder. The diameter of the cannula depends on the diameter of the transponder: the smaller the diameter of the transponder the smaller the diameter of the cannula will be.

The cannula outer diameter of a 2,12 mm transponder is 2,6 mm (12 G), the 1,41 mm transponder has a diameter of 1,8 mm (16 G). The exact spot on where to place the transponder to cats and dogs shall be according to the internationally recognized ISO 15639-1 standard[ii],

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Time for the identification, registration and safety of the identification

Principally the injection of the transponder does not stress the animal more than a typical injection. Usually, the time for an injection such as of isotonic solutions or veterinary medicine-into an animal's body is determined by its age or weight. This is necessary when the injection concerns a liquid or material which releases an active ingredient into the body to prevent overdose or an unwished side-effect for the development of a young animal.

However, this does not apply to a transponder, which is a hermetically closed device without any liquid or active ingredient for an interaction with the body's tissue. The only component in direct contact with the animal's tissue is the surrounding material of the transponder. Therefore, it is fundamental for the transponder to have a surrounding material which is non-toxic, scientifically proven as inert for the body. The only two types of such approved material are "Bio Glass" and "Polymer".

The best way to determine the right time for the identification with a transponder is by looking at the size and weight of the transponder in relation to the size and weight of the concerned animal. A 2,12 mm transponder has a weight of 0,9 grams and the 1,41 mm has a weight of 0,3 grams.

In principle, any cat or dog could be identified ("microchipped") already close to the time of birth. Usually, the kittens or puppies remain with the mother for at least 8 weeks, ideally longer[iii]. **Identification is largely mandatory before the animal is given away, so it is common that the identification happens right before the animal changes owner, hence at a later stage in its life.** Regrettably, in practice, it is often the case, that it is the new owner and not the breeder that is registered in the database as the first person associated with the animal. This essentially means that there is no registered connection with the animal and the person initially responsible for it.

**There is no reason, from a medical point of view, that the animal shall not be identified earlier, respecting the rules of the injection side (ISO 15639-1) and the conditions set by ISO 11784.** Adverse reactions are uncommon. A well-known phenomena is the so called migration, which mostly is imposed

when the transponder is not injected correctly according to ISO 15639-1 for example by improper needle insertion and transponder placement or neglect for the hygiene protocols during the procedure.

**The early microchipping of animals is particularly relevant when animals have to be identified and registered to be allowed to be marketed, including through online advertisements, but cannot leave their mother yet.** It is essential that the kitten or puppy is fixated and does not move, while injecting the hypodermic cannula. Once the transponder is injected, the number it contains in its microchip can be registered. It is very helpful for any traceability issues to register the animal at the name of the breeder as the first owner. Registration is then updated with the information of any subsequent owner. This way, traceability back to the breeder is ensured, for example if issues with the animal arise after the sale.

It is critical to stress that, there is essentially no use for an unregistered microchip number. The microchip number, shall be stored in a database, together with information related to the owner, and the age, breed and sex of the animal, et cetera..

The transponder technology is in use for 30 years, and safe. Issues such as surrounding material as well as sharpness of the cannula, and a good fixation of the animal for the injection to guarantee the prevention of undesired movement, are laid down in ISO 11784 and ISO 15639-1. There is no problem on technological or documentation level. Required for implanters is a proper education and availability of necessary know-how.

**As a conclusion for the right time of the microchipping act, the percent of the body weight which will be put under the skin should be used for an orientation, with 1% being acceptable.**

The injection of the transponder shall be performed by a veterinarian.

## The following experts support this position paper:

1. **Federation of European Companion Animal Veterinary Associations (FECAVA)**, FECAVA represents more than 25,000 companion animal veterinarians in 39 European countries.

2. **Union of European Veterinary Practitioners (UEVP)**, UEVP is an European umbrella organization of national veterinary practitioners' associations representing 27 member countries and 4 European federations.

3. **Dr. Nora Borislavova Dimitrova**, chief veterinarian at “Physio” Veterinary Clinic, Sofia, 322 Tsar Boris III Blvd.

4. **Dr. Swen Hüther**, member of ISO/TC23/SC19/WG3 and liaison officer ISO to the Federation of Veterinarians of Europe (FVE), Eurogroup for Animals, Europetnet, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), expert in the area of electronic animal identification, in particular for injectable transponders and former CEO of the company PlanetID.

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5. **Prof. Dr. Andreas Moritz**, Professor and Head of the Clinic for Small Animals, Internal Medicine at the Justus-Liebig University Gießen.[1]

6. **Alfred E. Rinaldi**. Mr Rinaldi is a senior animal I&R (Identification & Registration) expert and member of different technical Committees, such as ISO TC23/SC19/WG3 or AEN CTN68/GT1 (conveyor) or the Spanish Committee for animal EID (CEIEA). He has experience in all fields of I&R; creating legislation & administrative structures, design and execution of I&R in field pilot programs, equipment testing, design of specific I&R plans for different species, training, lecturing and publishing on I&R.[2]

7. **Dr. Thomas Steidl** (signs a private person) Dr. Steidl was awarded the Richard-Völker-Medaille. Specialist veterinarian for small animals and pets, has an additional qualification for reptiles as well as for ornamental and wild birds and is authorized to provide further training in these subjects.[3]

8. **Dr. Dimitar Hristov Yanovski**, deputy chairman of the National Council of the Bulgarian Veterinary Union, owner of "Physio" veterinary clinic, Sofia, Tsar Boris III Blvd. 322

9. **Veterinarians from FOUR PAWS Stray Animal Care Bulgaria**. The veterinarians have considerable experience with transponders, due to their work with stray animals.

    a. Margarita Chankova, DVM, Head of SAC @ FP-BG

    b. Slaveya Ivanova, DVM, SAC Clinic @ FP-BG

    c. Lyudmila Koleva, DVM, SAC Clinic @ FP-BG

    d. Nadezhda Mecheva, DVM, Head of SAC Clinic @ FP-BG

    e. Krasi Oncheva-Tsokeva, DVM, SAC Clinic @ FP-BG

    f. Rositsa Sotyanova, DVM, SAC Clinic @ FP-BG

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[i] Contact Dr. Swen Hüther: doc@sven-huether.de

[ii] In the canine and feline the transponders have to be put subcutaneously. There are worldwide two recognized implantation sites in use:

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[1] https://www.uni-giessen.de/de/fbz/fb10/institute_klinikum/klinikum/kleintierklinik/Innere/team/mitarbeiter/Moritz

[2] https://www.linkedin.com/in/alfredrinaldi/?originalSubdomain=es

[3] https://www.vetion.de/vetion-de-im-interview-mit-dr-thomas-steidl/

a) The transponder (containing a microchip) is implanted in the left side of the body in the cranial third of the neck between ear and shoulder.
   - Position of the insertion point: From the dorsoventral midline of the neck at the caudoventral edge of the ear 1 cm to 6 cm (one to four fingers, depending on the size and the breed) of the distance to the anterior edge of the shoulder blade.
   - Direction: Insert the cannula anteroventrally and place the transponder subcutaneously so that the position of the transponder is at a 90° angle to the jugular vein.

b) The transponder (containing a microchip) is implanted in the dorsal midline at the level of the 3rd thoracic vertebral spinous process just cranially to the anterior point of the shoulder blade or scapula (Figure 2)
   - Position of insertion point: In the subcutaneous tissue dorsally, at the level of the cranial edge of the shoulder blades, midway between the scapulae (area of the third rib).
   - Directions: form a skin fold and insert the cannula caudocranially and place the transponder subcutaneously, so that the position of the transponder is located parallel to the spinal column
   - This is the standard implantation site in many countries around the world.

Scanning with the appropriate RFID reader (conforming to ISO 11785) shall concentrate on the implantation site commonly used in that geographic locale. Should an animal scan negative, it is strongly recommended to scan the alternative site in use, as defined above. As migration is possible the animal shall be fully scanned to detect the presence of a transponder after migration. Since a considerable number of countries do not conform to either a) or b) it is strongly recommended to describe the injection site in the relevant ID document or passport.

[iii] "**Responsible Dog Breeding Guidelines**" Endorsed by the EU Platform on Animal Welfare 3 November 2020 - DOC/2020/11972 Rev1, Voluntary Initiative Subgroup on the Health and Welfare of Pets in Trade, page 25 *"Puppies must not be permanently separated from the bitch before they are fully weaned and not before they are 8 weeks of age unless it is deemed necessary by a veterinarian."* https://food.ec.europa.eu/system/files/2020-11/aw_platform_plat-conc_guide_dog-breeding.pdf
"**Responsible Cat Breeding Guidelines**" Endorsed by the EU Platform on Animal Welfare 3 November 2020 – DOC/2020/11982 Rev1. Voluntary Initiative Subgroup on the Health and Welfare of Pets in Trade, page 25 "Kittens must not be permanently separated from the queen before they are fully weaned and not before they are 8 weeks of age unless it is deemed necessary by a veterinarian" https://food.ec.europa.eu/document/download/52d8d522-3e6d-4cc8-8b6d-b9dd472e1334_en?filename=aw_platform_plat-conc_guide_cat-breeding.pdf