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# **Role and work of the ICAR Sub-Committee on Animal Identification**

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The role and the work of the Sub-Committee on Animal Identification is reviewed. Beside regular meetings and other general activities, the work of the Committee is mainly focussed in setting up guidelines and procedures for the testing of identification devices with regard to their conformity to the current ISO standards and their performance in the field. Testing is based on several protocols elaborated by the Sub-Committee after discussion with the identification industry and related parties. In the field of Radio Frequency Identification Devices (RFID), 84 transponders of different types have been successfully evaluated since the beginning of the procedure and may officially be used in animal identification. A first tests for ISO compliant readers has also been carried out recently. Furthermore, a procedure for the evaluation of conventional plastic eartags to be used in official identification programs has been prepared and will be set into force soon. An important part of the Sub-Committees work consisted in the elaboration and evaluation of a questionnaire on animal identification issues regarding farm animals among ICAR member countries.

*Keywords: identification, registration, transponder, reader, eartag, conformity, performance, ISO standard.*

Unique identification is a basic requirement for all activities where individual animal recognition is necessary, e.g. farm management, animal recording, animal breeding, animal health, disease eradication/prevention, beef labelling, purposes of trade, control of subsidies etc. The necessity of functioning identification and registration systems especially in disease prevention situations has become obvious during the outbreak of Foot and Mouth Disease in some countries of the European Union (EU) as well as during the recent BSE crisis. The importance of unique identification for all kinds of performance testing and subsequent evaluation of productivity in livestock has been recognised by the International Committee for Animal Recording (ICAR).

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## **Summary**

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## **Introduction**

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For this reason, ICAR, an “international non governmental non profit organisation” (INGO) with more than 50 members all over the world created a “Working Group on Animal Identification and Registration” by the end of the 1980s. According to the vote of the General Assembly in 1998, the working group was modified to be the “Sub-Committee on Animal Identification”. The Sub-Committee on Animal Identification is one of three Sub-Committees within ICAR’s operating structure (see Figure 1). Within its terms of reference, the Sub-Committee on Animal Identification covers the following subjects related to identification and registration:

- Preparation of guidelines for the relevant appendices of the International Agreement on Recording Practices
- Stimulation of new developments in and report on new equipment, procedures and methods dealing with:
  - Electronic identification;
  - Other identification devices;
  - Standardised layout of eartags for individual animals.
- Advising the ICAR Board on approval and/or certification of:
  - Institutes serving as ICAR test centers;
  - Identification devices used in individual animal identification.

According to the terms of reference, the work of the Sub-Committee on Animal Identification is focussed mainly to the following subjects/issues:

1. meetings and miscellaneous general activities;
2. organisation of device testing; and
3. publication/evaluation of a questionnaire on I&R of farm animals in ICAR member countries

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## **Meetings and miscellaneous general activities**

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Currently, the Sub-Committee has seven members and, occasionally, guests and observers attending the meetings held at least once a year. Members of the Sub-Committee regularly attend ISO/TC 23/SC 19/(T)WG3 working group sessions where international standards in electronic identification (RFID=Radio Frequency Identification Devices) are prepared. In these meetings the Sub-Committee presents and discusses guidelines on conformance testing of RFID-transponders/-readers and performance testing of RFID-transponders/-readers. Furthermore members of the Sub-Committee keep close contacts to national/international bodies with responsibilities in animal identification e.g. to the Commission of the EU prior to the publication of the new regulations. Relationships to other relevant organisations in animal identification also exist e.g. with the World Small Animal Veterinary Association (WSAVA).

Within miscellaneous general activities, the work of the Sub-Committee also consists in handling requests from ICAR members, the industry and interested parties on animal identification issues.

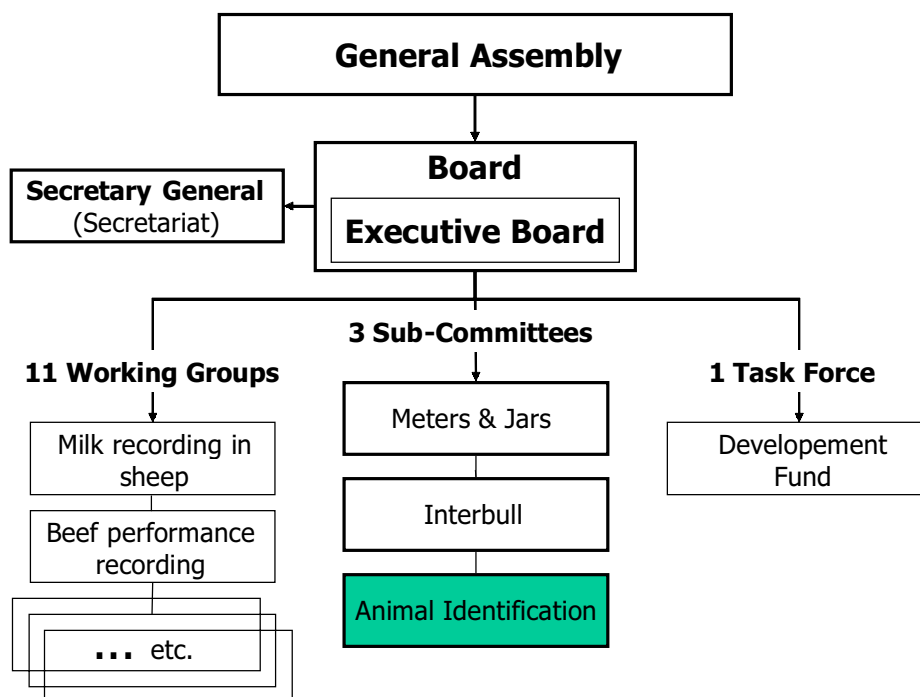


Figure 1. Operating structure of ICAR and the position of the Sub-Committee on Animal Identification.

In general, the activities of the Sub-Committee with regard to the testing of identification devices can be sub-divided into two main categories as illustrated in Figure 1:

- **Conformity testing**  
This kind of testing has to be applied if the function and the use of identification devices are bound to any kind of official regulation. An example for conformity testing is the test of transponders and readers concerning their conformance with the ISO standards 11784/11785. In general, the submission of identification devices to conformity testing is obligatory previous to their application in the official identification of animals. Conformity tests are carried out by officially authorised institutions (e.g. ICAR being appointed by ISO as Registration Authority to perform conformity tests on transponders).
- **Performance testing**  
Performance testing is a mandatory option for checking the utilisation of identification devices in practical application. The objective of this kind of testing is to provide neutral information concerning the special characteristics of identification devices to the end-user, e.g. farmer/owner. While conformity testing is mainly carried out in

## Organisation of device testing

laboratories, the most important part of performance testing is field testing. ICAR is currently introducing a performance test for transponders (extended laboratory test) and a performance test (application/field test) for eartags used in official identification schemes (see Figure 2).

The Sub-Committee has set up several guidelines describing the procedures on how to test devices and grant approvals for successfully tested identification equipment. Through this the Sub-Committee has contributed to the extension of the “International Agreement on Recording Practises” with reference to Section 1: “ICAR Rules, Standards and Guidelines on Methods of Identification”.

**Conformity Testing of Radio Frequency Identification Devices (RFID)**

Conformity testing of RFID-transponders is based on the ICAR guideline “Conformance evaluation of RFID-devices, Part 1: ISO 11784/11785 , conformance of transponders including granting and use of a Manufacturer Code for ISO compliant transponders”. Since the beginning of this test activity in 1995, 49 manufacturers applied for participation. Altogether 84 transponders have successfully passed the tests at the ICAR test centers. In the end, participation to this test aims at receiving a manufacturer code. The manufacturer code is necessary to ensure unique identification numbers as long as national databases do

| Test category | Kind of test  |                   |                             |
|---------------|---|-------------------|-----------------------------|
| Performance   | <i>Application-/Field test</i><br>(for any kind/combination of identification devices)  |                   |                             |
|               | <i>Extended laboratory test</i><br>(for any kind/combination of identification devices) |                   |                             |
| Conformity    | <i>Laboratory test (predominant)</i>  |                   |                             |
|               | Transponder conformity<br>(with granting of manufacturer code)                          | Reader conformity | Other ID-devices conformity |

Figure 2. Categories for the testing of identification devices.

not exist and, therefore, is a prerequisite to start commercial production and distribution of transponders. ICAR offers 3 types of tests: a full test (for the first transponder or in case of modification in technology), a limited test (for transponders with a modification in primary/secondary packaging) and a listing update test (for transponders already tested in the full/limited procedure for one manufacturer and to be used by a second manufacturer). In general, the transponders tested so far can be classified as follows:

- Injectable transponders (small size transponders able to be injected into an animal's body and encapsulated in a biocompatible and non-porous material, i.e. glass).
- Electronic eartag transponders (plastic covered transponders able to be fixed to the ear of the animal using a locking mechanism or to be attached in non-reversible way to an eartag).
- Electronic attachment transponders for application with conventional eartags.
- Electronic bolus transponders (transponders placed into a high specific gravity container able to be orally administered to a ruminant and remaining permanently in its fore stomachs).

The results of the tests together with a photograph are published via the ICAR web page (www.icar.org, see Figure 3).

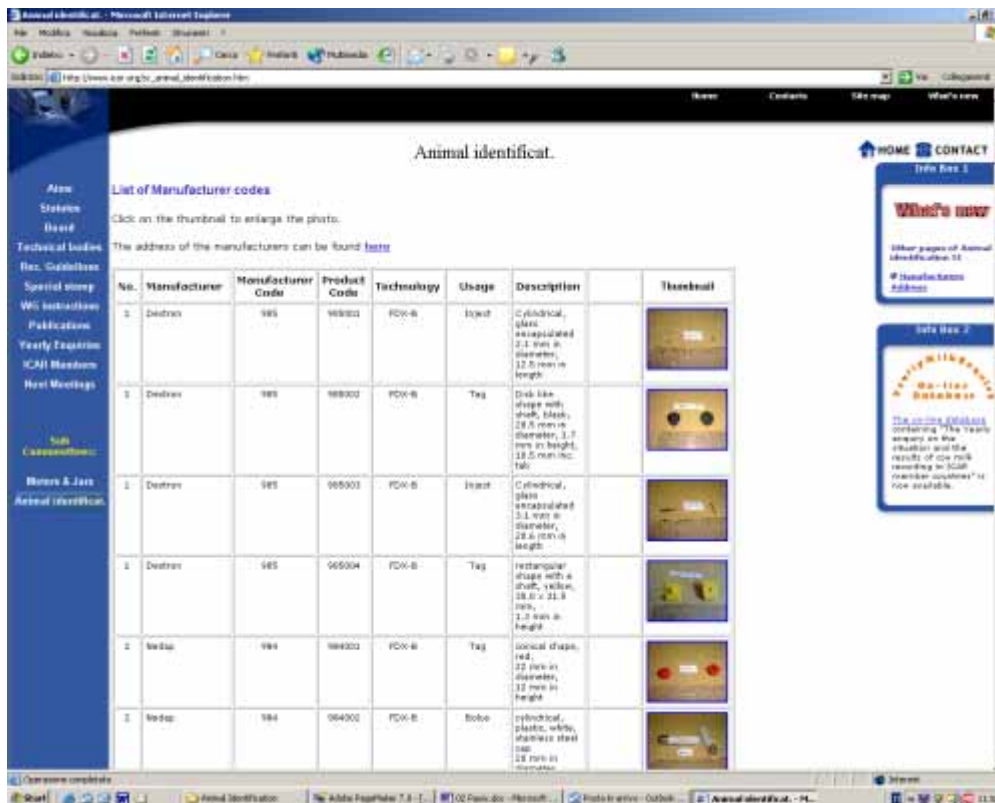


Figure 3. The results of the tests are published on ICAR's web page (www.icar.org).

Conformity testing of RFID-readers is based on the ICAR guideline "Conformance evaluation of RFID-devices, Part 2: ISO 11784/11785, conformance of transceivers". The first reader test on ISO conformity, i.e. capability of reading both HDX and FDX-B transponders, has been carried out in May 2002.

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**Performance testing of official identification devices**

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An important activity of the Sub-Committee during the past years was the setting up of a guideline for testing conventional eartags titled "Performance Evaluation and Approval of Official Identification Devices, Part 1: Conventional permanent plastic eartags with or without machine readable printings." From experiences gained in several practical applications it became obvious that there is a potential need to have reliable test results for eartags used in official identification schemes. These results are not only of importance for the farmers but also for competent authorities responsible for the supervision of animal identification and registration rules. The whole testing procedure for conventional eartags is subdivided into three main subsections as follows:

1. Participation in the test procedure to obtain ICAR approval (General remarks);
2. Description of laboratory/field tests and assessment procedures (Laboratory test, preliminary field test, extended field test);
3. Conditions for granting, maintenance and use of approvals (Provisional approval, full approval, withdrawal of approval).

A thoroughly prepared draft has been discussed with the industry during several joint meetings. The draft was generally accepted. After incorporation of some minor corrections and amendments, this document will be submitted for approval by the ICAR Board in May 2004 with the first test run to be started in the second half of 2004.

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**ICAR approved test centers**

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To accomplish its tasks within testing of identification devices, ICAR co-operates with two test centres. They perform the conformity tests on RFID devices according to the ICAR guidelines. Test centres have to be approved by the ICAR Board and are audited on a regular basis by members of the Sub-Committee. Enhancing its testing activities, ICAR is interested in having more test houses preferably located in ICAR member countries.

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**Questionnaire on I&R of farm animals in ICAR member countries**

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During 2003, the ICAR Sub-Committee on Animal Identification carried out a survey on animal I&R systems worldwide covering cattle, sheep, goats and buffaloes. All ICAR member organisations received a questionnaire configured in a way that made it possible for the participants to enter information on almost any type of identification system from tattooing to electronic identification. Member organisations were encouraged to report on all systems used in their countries or regions. Altogether, answers were received from 100 I&R systems, 39 for cattle

26 for sheep, 28 for goats and 7 for buffaloes. The geographical distribution of identification systems covered all continents except for Asia. 64 % of all answers regarding cattle systems came from EU member states or EU new member states, 10 % from European countries outside the EU and 26 % from outside Europe. The distribution of answers concerning other species was similar to that of cattle. Unfortunately, the questionnaire did not provide many answers to questions concerning I&R in developing countries. A report on the results is given by O.K. Hansen, starting from page 9 of these Proceedings.

Beside other activities within the terms of reference, the Sub-Committee has made considerable efforts to prepare guidelines for testing and approval of identification devices used in official animal recognition. The guideline on conformance testing of RFID transponders and granting of manufacturer codes is well established and accepted. ICAR's role in this field is enforced by ISO through the appointment as an official ISO Registration Authority. In addition, a test protocol for conventional ear tags to be used in official identification schemes has been finished and will be set into force in the second half of 2004. With its activities in evaluation of identification devices the Sub-Committee provides useful information for administrations, organisations and farmers regarding the practical value of identification devices. The Sub-Committee is going to extend its agenda also to identification and registration matters in sheep and goats.

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## **Conclusions**

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