THE GLOBAL STANDARD
FOR LIVESTOCK DATA

Section 10 - Overview. Identification Device Testing and Certification

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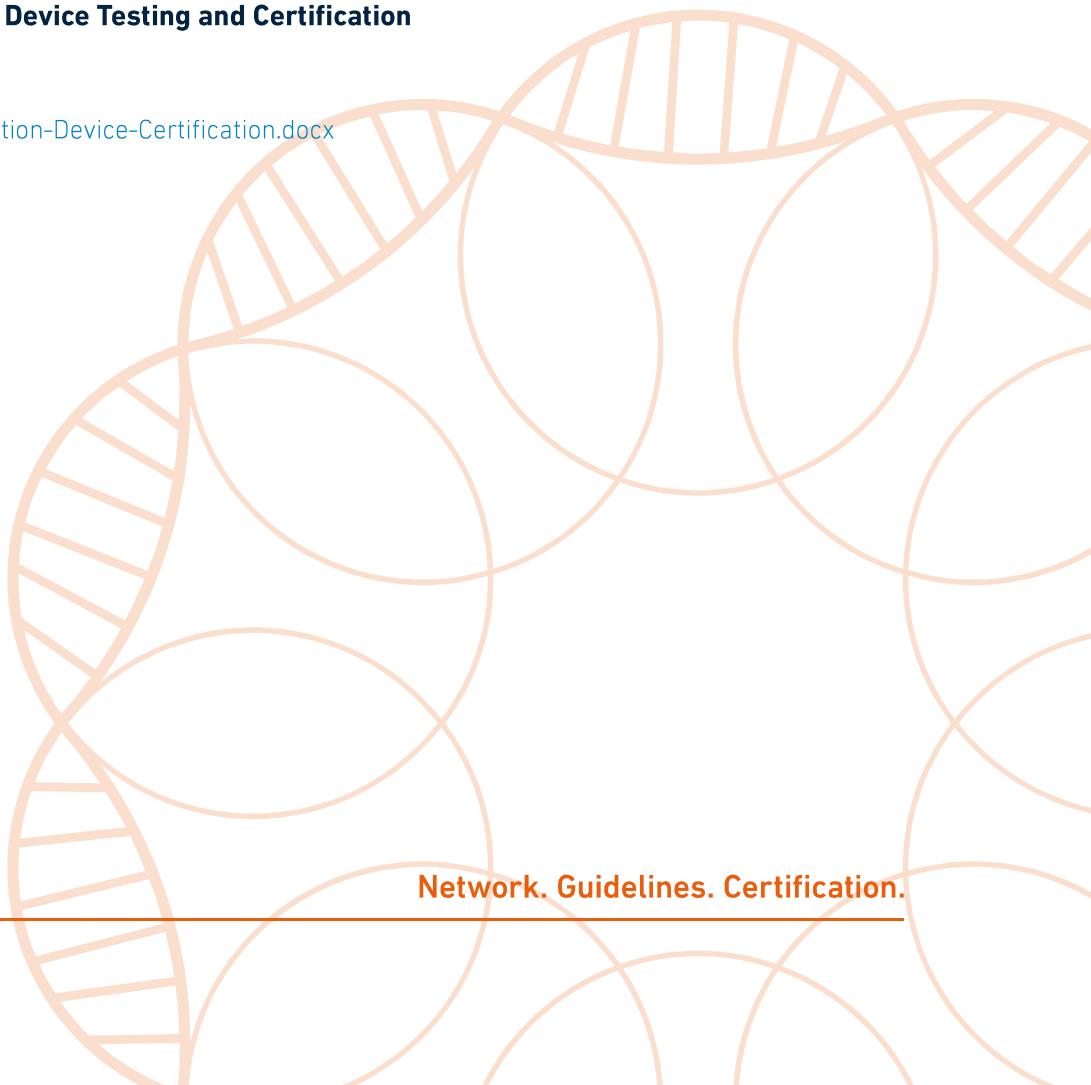

Network. Guidelines. Certification.

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Change Summary

Date of Change	Nature of Change
July 2017	Rewritten using new structure for ICAR Guidelines. Reformatted using new template. Table of contents added.
August 2017	Minor editorial updates.
September 2017	Updated styles and format into uniform template
October 2017	Table and Figure captions added. List of Tables and Figures added. Cross-references corrected.
February 2018	Changes approved by the ICAR General Assembly.
September 2020	Corrected grammatical errors and updated hyperlinks
April 2021	Grammatical clarification updates.
June 2021	Minor grammatical updates.
October 2022	Grammatical updates.
August 2024	Updated title page format

1 Introduction

On June 22, 2007, the International Standards Organisation (ISO) appointed ICAR as the Registration Authority (RA) competent to register manufacturer codes used in the radio frequency identification (RFID) of animals in accordance with ISO 11784 and ISO 11785.

ICAR has administrative procedures in place for testing the conformance of RFID devices with respect to ISO 11784 and ISO 11785, and only ICAR-accredited test centres can conduct the ICAR certification testing. In addition, ICAR offers evaluations on various quality and performance features of livestock identification devices and transceivers that are tested for conformance with ISO 11784 and ISO 11785. A wide range of evaluations is also available for conventional plastic ear tags.

2 Definitions and Terminology

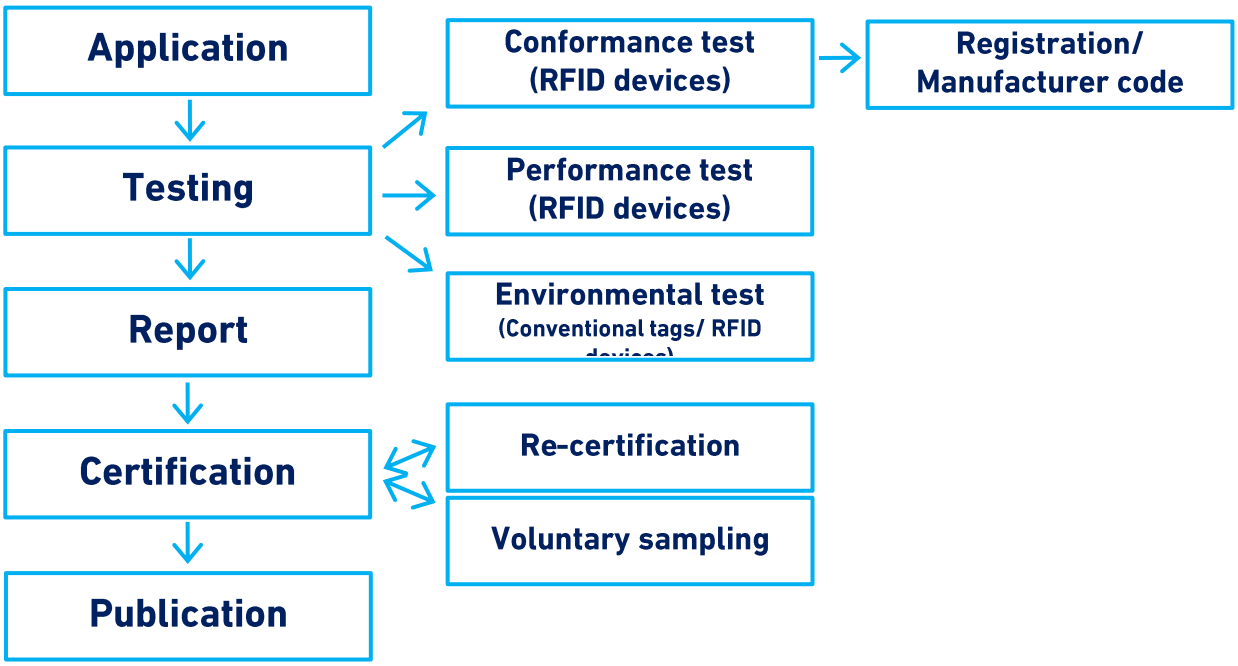
Table 1. Definitions of terms used in these guidelines.

Term	Definition
RFID devices	Animal identification devices (ear tags, leg tags, boluses, injectable transponders) using radio-frequency identification technology.
Conventional ear tags	Visual ear tags used for animal identification that do not use RFID technology. These devices may or may not be machine readable (barcoded).
Registration Authority (RA)	Authority appointed by ISO, competent to register manufacturer codes used in the radio frequency identification of animals in accordance with ISO standards 11784 and 11785.
Test centre	ICAR-accredited laboratory that carries out tests on animal identification devices.
Registration	The granting of shared/unshared manufacturer codes and unique product codes as defined in ISO 11784.
Manufacturer code	A 3-digit number granted by ICAR to a manufacturer.
Certification	ICAR service additional to the registration of devices, with 5-year validity.
Re-certification	ICAR service for devices whose certification has expired after 5 years.
Competent Authority (CA)	Ministry or organisation responsible for national animal identification schemes.
Voluntary sampling	ICAR quality verification service for certified devices available on the market.

3 Scope

Section 10 of the ICAR Guidelines covers the testing and certification procedures, from the submission of the application by a manufacturer to the publication of the certification on the ICAR website, and the re-certification and/or sampling of the product.

Figure 1. Scope of Section 10: Testing and certification of animal identification devices



4 Application

The procedure for any type of test and certification starts with an application submitted by the manufacturer to the ICAR Secretariat. The Secretariat reviews the application, selects the test centre, issues an umbrella contract (for initial applicants), and issues the invoice which upon payment testing commences. Financial transactions between manufacturers, test centres and ICAR are coordinated by the ICAR Secretariat. Testing can only occur when the manufacturer sends all the necessary devices and accessories to the test centre. The devices and accessories remain the property of ICAR.

5 Testing

Testing of identification devices can be subdivided into the following four main categories and outlined in Table 2.

5.1 RFID Conformance test (ISO 24631-1)

Conformance testing is required to demonstrate electronic transponders meet the specifications outlined in ISO 11784 and ISO 11785. The submission of identification devices to conformance testing is obligatory before they can be used in the official identification of animals.

Conformance tests are coordinated by the ICAR Secretariat. Acting as the RA on behalf of ISO, ICAR issues a Certificate for RFID devices conforming with ISO 11784 and ISO 11785.

Details of the RFID Conformance test are described in Procedure 1, Section 10 'Conformance of RFID Transponders with ISO Standards' available here.

5.2 RFID Performance test (ISO 24631-3)

Performance testing is an evaluation of the following characteristics of an RFID device: modulation amplitude, bit length stability, minimum activation field strength resonance frequency and amplitude voltage response (Vss). These RFID performance test results are not subject to pass or fail criteria but provide useful additional information on device behaviour when communicating with a reader. Acting as the RA on behalf of ISO, ICAR evaluates RFID devices through the RFID performance test and provides the report of the performance test to the manufacturer.

5.3 Device Composition and Environmental Performance test (ICAR)

ICAR offers a device composition and environmental performance test for both conventional and RFID external devices. The objective of these tests is to give extensive information on device durability and performance in diverse animal management environments. Procedures will vary depending on the device type. ICAR shares the test report and ICAR certificate with the manufacturer and the ICAR website is updated accordingly.

Details of the device composition and environmental performance test are described in Procedure 4, Section 10 'Testing of Conventional Plastic Ear Tags' available here and Procedure 5, Section 10 'Testing of External RFID Devices' available here.

5.4 Voluntary sampling of Animal Identification Devices

Voluntary sampling is a service for Competent Authorities or other service users, other than manufacturers or their agents. The service is a quality verification service to ensure that devices available in the relevant market(s) remain compliant with the appropriate ISO and ICAR test protocols. Voluntary sampling does not lead to re-certification of the devices.

Details of the service are described in Procedure 6, Section 10 'Voluntary Sampling of Identification Devices' available here.

5.5 Summary of Tests

Table 2. Categories for the testing of identification devices.

Test category	Test description	Link to test procedure
Conformance and Performance ISO 24631-1 ISO 24631-2 ISO 24631-3 ISO 24631-4	Conformance/performance test of transponder (including granting of manufacturer code) or transceiver	Section 10, Procedure 1 'Conformance of Transponders with ISO standards' Section 10, Procedure 2 'Granting of Manufacturer Code' Section 10, Procedure 3 'Conformance of Transceivers with ISO standards'
Composition and environmental performance – Conventional ear tags	Extended laboratory test	Section 10, Procedure 4 'Testing of Conventional Plastic Ear Tags'
Composition and environmental performance – External RFID devices	Extended laboratory test	Section 10, Procedure 5 'Testing of External RFID Devices'
Voluntary sampling	Partial test for certified devices available on the market.	Section 10, Procedure 6 'Voluntary sampling of Identification Devices'

5.6 Test Centres

Testing is conducted by ICAR-accredited test centres. Every test is contracted by the ICAR Secretariat to a specific test centre. The test centre is obliged to act according to the procedures laid down within the test protocols. In addition, all details associated with the testing phase, including the test results, must be kept strictly confidential.

Test centres attend the meetings of ICAR's Animal Identification Sub-Committee and participate in annual ring test measurements to review consistency of test results between the laboratories. ICAR reviews the results to ensure overall uniformity between the laboratories. Further information regarding the test centres can be found here.

6 Manufacturer code

Following the first successful full conformance test, ICAR in its role as RA for ISO for the Standards 11784 and 11785 allocates to the manufacturer a code to be used only for products registered by ICAR. There are two types of manufacturer codes:

a. Shared manufacturer code (900): can be granted to more than one manufacturer. A restricted range of identification codes is allocated to the registered product for exclusive use together with the shared manufacturer code.

b. Unshared manufacturer code (901-998): can only be granted to one manufacturer following official proof that during two consecutive years the company has sold a minimum of one million (ICAR certified) transponders per year.

Note: the manufacturer code concerns only the certification of RFID devices. With conventional ear tags, ICAR allocates unique certification codes to the products that pass the Device Composition and Environmental Performance Test.

7 Report

Test centres prepare a confidential report of the test results and submit the report to the ICAR Secretariat. The Secretariat reviews the report and forwards it to the manufacturer along with the ICAR certificate should the test be successful. The report is also shared with the Animal Identification Sub-Committee for information only.

8 Certification

The tests that lead to an ICAR certificate are:

a. RFID Conformance test (ISO 24631-1).

b. Device Composition and Environmental Performance test (ICAR).

Certificates are issued by the ICAR Secretariat and signed by the ICAR Chief Executive and then emailed to the manufacturer. In reference to certificates of conformance, the Chair of the ISO/TC23/SC19/WG3 is also copied in the communication to ensure the ISO remains informed about registered devices under the RA Agreement. For other tests not subject to pass or fail criteria (e.g. Performance test), an official ICAR letter acknowledging the completion of the test is sent to the manufacturer along with the test results.

9 Publication

All ICAR-certified devices are published on the ICAR website:

a. RFID devices web page (available here).

b. Conventional ear tags web page (available here).

Devices whose certification has expired are removed from the above listed webpages. A specific web page lists all the devices registered by ICAR in conformance with ISO standards 11784 and 11785. Devices listed in this page are not removed as the registration is valid for the lifetime of the device.

Table 3. Steps, actions and responsibilities in the ICAR certification procedure.

Step	Action	Responsibility
1	Application for testing of a device	Manufacturer
2	Acceptance of application, and issuance of umbrella contract and invoice	ICAR Secretariat
3	Testing and report compilation	ICAR test centres
4	Sharing of test results with the applicant	ICAR Secretariat
5	ICAR certification	ICAR Secretariat
6	Publication on the website	ICAR Secretariat

10 Re-certification

After 5 years from the issuance of an ICAR certificate, the test can be repeated for the certification to be renewed for another 5 years. The device maintains its original product/certification code. The test protocols applied for the re-certification are:

a. The limited test protocol for RFID devices

b. The preliminary assessment protocol for conventional devices

Note: if the application for re-certification is submitted more than 5 years after the original certification, full test procedures are required.

The application process is the same as for any other tests. Once re-certified, the device remains on the ICAR website for another 5 years and the updated expiration date of the certification is indicated.

11 Voluntary sampling

At any given moment, Competent Authorities or other service users can apply for a sampling of certified devices found on the market. Devices are tested against the current ICAR standards, and the results are compared with original or re-certification results for the same devices. The test protocols used by the laboratories are:

a. The limited test protocol for RFID devices.

b. The preliminary assessment protocol for conventional devices.

The applicant may also request or specify additional test protocols, provided these are defined in other existing ISO or ICAR test protocols.

Devices to be tested must be collected and submitted to the ICAR test centre by the applicant and not by the manufacturer.

12 Conditions for the use of ICAR certificates

a. The conditions for the use of ICAR certificates are described in the respective procedures.

b. If a device is certified by ICAR, the manufacturer may publish the certification of its device.

c. ICAR certification does not guarantee that the device is suitable for all environments.

d. If changes are made to a device during its 5-year certification period, the manufacturer must submit a Device Change Notification. See Procedures 4 and 5.

Note: A manufacturer must not use the ICAR logo for any purpose, unless expressly authorised by ICAR.

13 Appendices