National Livestock
Identification System

Requirements for NLIS Animal Identification Technology

Integrity Systems Company Limited (ISC)

Version 1.0

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CONTENTS

The series of documents which make up the *NLIS Animal Identification Technology Approval Program Approval Requirements* were prepared based upon consultation and collaboration with the NLIS Standards Working Group, the NLIS Standards Committee, Integrity Systems Company Ltd, Australian Government, state and territory government departments of primary industries and animal identification technology Suppliers.

These documents were formally adopted by SAFEMEAT on 29 June 2023.

INTRODUCTION

Animal identification technologies for use under NLIS are required to be **approved** under the *NLIS Animal Identification Technology Approval Program* (the 'Program') and become 'NLIS Approved Technologies'. Initial approval is based on a five-year cycle and reapproval for the same animal identification technology can be sought every five years thereafter.

Individual state and territory governments may impose other requirements and authorisation processes, such as regulations regarding the approval, use and supply of animal identification technologies within their jurisdiction, and have their own processes in place for managing livestock identification and traceability. Furthermore, industry policy bodies and SAFEMEAT may also make policy decisions in relation to NLIS that influence production and supply of animal identification technologies.

The primary documents which form the Approval Requirements for the Program are the:

a) *NLIS Animal Identification Technology Approval Program Rules* (the 'Program Rules'); and

b) *Requirements for NLIS Animal Identification Technology* (the 'Standard'; this document).

This document, the Standard, contains all the outcome, performance-based and prescriptive **requirements for animal identification technologies**.

Organisations seeking approval for animal identification technologies must supply evidence to demonstrate that their technology conforms with the Approval Requirements. Only animal identification technologies that have been considered by the Standards Committee and approved by the Program Administrator under the Approval Requirements can be identified with the NLIS Logo and only those which have been given conditional or full approval can be commercially supplied to producers for use under NLIS.

This document forms part of the legally binding agreement that Suppliers enter into with the Program Administrator as part of the approval process. The Standard can be fulfilled by any Supplier that supplies animal identification technologies regardless of size or complexity of its activities.

Legislation in each state and territory govern the supply and use of NLIS Approved Animal Identification Technologies. This Standard must be considered in conjunction with more specific requirements that are prescribed by regulators as well as industry policy. To fulfil this Standard, Suppliers must also fulfil compliance requirements.

1 SCOPE

1.1 This document provides requirements for any technology used to identify livestock, specifically cattle, sheep and goats, under NLIS.

1.2 This technology could include, but is not limited to, livestock tags, devices, identifiers, buttons, bands, microchips, all of which may contain electronic or non-electronic components, and machine-readable codes, such as bar or quick response (QR) codes.

1.3 The requirements in this document are referenced as part of the Approval Requirements. Demonstrated fulfilment of the requirements in this document will assist Applicants and Suppliers in obtaining and maintaining approval of their animal identification technologies under the Program.

2 GENERAL REQUIREMENTS

Animal identification technology

2.1 Primary purpose

2.1.1 The **primary purpose** of the animal identification technology shall be to facilitate lifetime traceability of an animal or group of animals under NLIS.

2.1.2 Should the animal identification technology also be used for another purpose; that **other purpose** shall not encumber the ability for the technology to perform its primary purpose.

2.1.3 The animal identification technology shall:

a) provide for the identification of an individual animal or group of animals;

b) adhere to the numbering, coding or pattern format specified for the type of technology;

c) consist of options for both breeder and post-breeder technology;

d) comply with compliance requirements; and

e) comply with any relevant requirements relating to the NLIS.

2.2 Complete technology

2.2.1 The **complete** animal identification technology as approved, shall consist of:

a) **physical components** which enable lifetime traceability, which may be:

i. a whole **primary component**; or

ii. separate **multiple components**, one of which is considered the primary component, that when applied to the animal become a **whole component**; and

NOTE 1 Examples of physical components could include, but is not limited to, all livestock tags, devices, identifiers, buttons and bands, microchips, all of which may contain electronic or non-electronic components, and machine-readable codes, such as bar or quick response (QR) codes.

NOTE 2 The primary component is considered to house the componentry which enables identification (this may be a printed number, pattern or code or an electronic or non-electronic component).

b) the printing, numbering, pattern or coding as specified for the technology.

2.2.2 In addition to the complete animal identification technology, **supplementary items** shall consist of:

a) the system or tool for application of the technology to the animal;

b) instructions to be supplied to the user of the technology; and

c) packaging, including statements and markings on the packaging and labelling.

2.2.3 Physical components shall:

a) in the case of a whole primary component, be approved and supplied as a whole with no additional components or features; or

b) in the case of multiple components that, when applied to the animal, become a whole component, be approved and supplied together as a whole; and

c) not be substituted during assessment, supply, application or use in its entirety or in part.

NOTE Packaging of multiple components in their separate form is permissible provided packaging and supply is designed to ensure the multiple components remain together throughout supply, application and use.

2.2.4 The complete animal identification technology and its supplementary items shall be:

a) approved as a complete unit and items shall not be substituted under the approval granted; and

b) supplied as a complete unit and items shall not be substituted during assessment, supply, application or use.

2.3 Types of technology

2.3.1 Only those **types of technologies** specified in Annex A shall be used on the associated livestock species.

NOTE The absence of a technology specified for a particular species does not necessarily mean it cannot be approved for that species in the future.

Design

2.4 General

2.4.1 The design of the animal identification technology shall ensure the technology:

a) achieves the primary purpose; and

b) once applied, can remain applied to the animal for its lifetime.

NOTE It is expected that animal identification technologies can be applied from birth; however, it is recognised that technologies can also be applied at different stages in an animal's life.

2.5 Dimensions

2.5.1 The dimensions of the physical component shall ensure that any printing on the whole component shall be readable at a distance of 75cm on live, stationary animals under daylight conditions.

NOTE Annex B provides formative guidance on dimensions which may meet this requirement.

2.6 Printing

2.6.1 The following **principal information** shall be printed on the animal identification technology:

a) the **primary number** specified for the relevant animal identification technology; and

b) the NLIS Logo.

2.6.2 If space permits, **additional information** may be printed on the animal identification technology and shall include:

a) information that meets compliance requirements. This may include letters which shall have the meaning specified in Annex C; or

NOTE When technologies are printed with any letters in Annex C, the application instructions shall state that it is the responsibility of the person applying the technology to ensure that the technology is only applied to the relevant animals.

b) any other information specified for that technology elsewhere in this document.

2.6.3 Where additional information comprises unique numbering, which is printed on matching multiple components, the packaging of the components shall be designed to prevent any disassociation of the matching components.

2.6.4 The position of the information printed on the physical component shall be such that:

a) the primary number is:

i. printed on the primary component;

ii. not printed around any bend or join in the physical component; and

b) any additional information does not compromise the readability of the principal information.

NOTE Other information not specified in this document may be considered for approval by the Program Administrator.

2.6.5 The printing of the principal information shall be readable at a distance of 75cm on live, stationary animals under daylight conditions.

2.6.6 Printing shall not differ to that specified:

a) in this section or elsewhere in this document; or

b) where requested, by the producer.

2.7 Colour

2.7.1 Where components can be coloured, the predominant colour for animal identification technologies shall be as specified for that particular technology and species of livestock in Annex D.

NOTE 'Predominant' means a minimum of 75% of the visible surface of the whole component, when that component is able to be coloured. The colour of the printing is not included in this percentage.

2.7.2 The predominant colour shall not differ to that specified:

a) in this section or elsewhere in this document; or

b) by the producer, where requested.

2.8 Security

2.8.1 Animal identification technologies shall be designed to prevent unauthorised removal and reuse in accordance with Annex A. The principal information shall be printed in such a manner that it cannot be defaced or have its form altered without leaving evidence.

Durability and structural integrity

2.9 Physical deterioration of print and materials

2.9.1 For the specified number of years after application to livestock under Australian conditions, the physical components shall:

a) retain their structural integrity; and

b) show no apparent physical deterioration which may impact retention and readability.

NOTE Physical components may lose their structural integrity or deteriorate due to ultraviolet radiation, rain, heat and cold or other environmental conditions.

2.9.2 The specified number of years shall be:

a) Cattle: eight years

b) Sheep: eight years

c) Goats: eight years

2.9.3 For the lifetime of the animal, the printing specified for that technology including any printing which may be engraved or moulded, shall be readable at a distance of 75cm from 95% of live, stationary animals under daylight conditions.

Retention

2.10 Loss

2.10.1 Animal identification technologies shall be designed to be retained on the animal for its lifetime.

2.10.2 Within the first three years of application under normal Australian conditions, the **loss rate** of animal identification technologies shall not exceed the tolerances specified for that technology.

2.11 Application failure

2.11.1 Failure during application of animal identification technologies shall not exceed 2% of application attempts.

NOTE 1 Any attempt to apply an animal identification technology using the applicator approved for use with that technology that does not result in the technology being applied effectively, while following the Supplier's instructions, is considered a failure.

NOTE 2 Examples of application failure include physical component or applicator breakage, or the failure of multiple components to lock together securely as a whole component.

Safety and welfare

2.12 Human safety

2.12.1 Application of animal identification technologies shall not:

a) result in harm to the person applying the technology; or

b) contaminate the animal in a manner to render it unfit for human or animal consumption;

2.13 Animal welfare

2.13.1 Animal identification technologies shall be the smallest size and weight appropriate for the animal and technology, which causes the least amount of pain and irritation.

2.13.2 Application of animal identification technologies shall not:

a) cause excessive bleeding, unnecessary pain or irritation to the animal;

b) present a serious infection risk to the animal;

c) adversely impact the long-term welfare of the animal; or

d) damage the hide of the animal.

NOTE It is recognised that other conditions may contribute to the signs and symptoms of the events identified above. The technology must be identified as the primary cause of these events.

Reuse

2.14 Reuse not permitted

2.14.1 Reuse of an animal identification technology in its entirety shall not be permitted.

Instructions, packaging and labelling

2.15 Packaging information

2.15.1 The following shall be included with the animal identification technology packaging:

a) instructions on storage, application and use including:

i. the species which may be identified with the technology;

ii. whether the technology is a breeder or post-breeder technology;

iii. the optimal position on the animal for technology application and other directions relating to animal welfare, for example disinfection procedures;

iv. the specific applicator(s) which is to be used with the technology; and

v. instructions for using the applicator;

b) the possible risks for harm to the person applying the technology to the animal, and to the animal, and the risk mitigation measures to be taken to prevent harm;

NOTE This includes a description of the common risks of injury to the person and to the animal (for example ears of livestock being ripped) and how to avoid these injuries.

c) the necessity to:

i. record movements of animals to the NLIS database; and

ii. ensure breeder technologies are only applied to livestock still on their property of birth;

d) prominent statements and label claims on the product packaging which are required as part of the approval including the status of approval which has been granted to the technology;

e) warranty and replacement conditions; and

f) the process for making a complaint, including provision of the email address and telephone number for the Program Administrator's complaints contact.

2.16 Advertising standards

2.16.1 All information contained on the packaging shall meet Australian advertising standards and any other relevant compliance requirements.

3 SPECIFIC REQUIREMENTS FOR ELECTRONIC TECHNOLOGIES

Low frequency RFID technologies

3.1 General

3.1.1 Animal identification technologies that use low frequency RFID shall:

a) contain a half-duplex (HDX) transponder complying with ISO 11784 and ISO 11785;

b) have current supporting ICAR documentation, including an Approval of Performance and Conformance under the ICAR Conformance Standards and maintain the currency for the duration of the Approval Agreement;

c) support unique individual identification through numbering and encoding;

d) be encoded with a unique number that is unable to be reprogrammed and commences with a 3-character numeric prefix code issued by ICAR (ICAR manufacturer code or ICAR Shared-code) as specified in Table 2 and 3; and

e) be able to accurately and reliably machine-read each animal:

i. using:

1) commercially available handheld and panel readers which operate within the bandwidths defined in AS5019-2001, specifically within the transponder response frequency of 124.2 +/- 2.0kHz for Binary 1 and 134.2 +/- 1.5kHz for Binary 0; and

ii. in a walk-through situation; and

iii. in a manner which allows each animal to move freely past a reading point in a single file.

3.1.2 If the low frequency RFID technology is applied internally to the animal it shall be supplied with a visual identifier which is applied externally to the animal to indicate the presence of the internal technology. The visual identifier shall:

a) for cattle, be a non-recyclable permanent visual identifier either in:

i. white (for breeder technologies) or orange (for post-breeder technologies) and include the primary number; or

ii. light green and triangular in shape and, if relevant, include the letter R or the word “RUMEN”.

b) include the NLIS Logo, and the words DO NOT REMOVE.

3.2 Numbering and encoding

3.2.1 For low frequency RFID technologies:

a) the primary number shall be the 16-character NLIS number which shall be unique and, in the format, and as further described in Tables 1, 2, 2a and 2b.

b) the secondary number shall be the 64-bit RFID number which shall be encoded in accordance with ISO 11784 and Table 3.

3.2.2 An NLIS number shall be generated and accurately associated with the RFID number of the transponder inside the technology.

Table 1: Example NLIS number

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
3	A	B	C	D	1	2	3	X	B	D	0	0	2	3	5

Table 2: Explanation of the characters in the NLIS number

Character	Description	Value
1 – 8	PIC of Issue	The 8-character PIC of the property to which the technologies are issued.
9	Manufacturer Code	The Manufacturer Code assigned to each Supplier by the Program Administrator.
10	Technology Type Code	See Table 2a.
11	Year of Manufacture Code	See Table 2b.
12 – 16	Serial Number	The first character can be a number or a letter, except O and I which cannot be used. The remaining 4 characters shall be numbers.

Table 2a: Technology Type Codes

Species	Technology Type	Code
Cattle	Breeder ear tag	B
Cattle	Breeder rumen bolus	C
Cattle	Post-breeder ear tag	E
Cattle	Post-breeder rumen bolus	F
Sheep	Breeder ear tag	S
Sheep	Post-breeder ear tag	T
Goats	Breeder ear tag	K
Goats	Post-breeder ear tag	L

Table 2b: Year of Manufacture Codes

Year of Manufacture	Code
2014	K
2015	L
2016	M
2017	N
2018	P
2019	Q
2020	R
2021	S
2022	T
2023	U
2024	V
2025	W
2026	X
2027	Y
2028	Z
2029	A
2030	B

NOTE TO TABLE 2b This sequence continues and will restart with 'C' in 2031. The letters 'I' and 'O' are not used.

Table 3: 64-bit RFID transponder encoding

Bit number	Description	Value
1	Flag for animal (1) or non-animal (0) identification	Must be 1
2 – 4	Retag counter	Must be 0
5 – 9	User information field	Must be 0
10 – 15	Reserved field	Must be 0
16	Flag indicating the existence of a data block (1) or no data block (0)	Must be 0
17 – 26	Manufacturer code	Manufacturer code as issued by ICAR assigned for use specifically for that model
27 – 64	National identification code	In combination with the ICAR manufacturer's code, forming the transponder's unique number.

3.3 Additional requirements for printing

3.3.1 For multiple components:

a) the last five characters of the primary number printed on the primary component may be duplicated on the remaining components;

b) the primary number shall not be split across two or more components; and

c) the information as specified in Annex A shall be printed.

3.4 Performance

3.4.1 The **loss rate** of animal identification technologies which use low frequency RFID shall not exceed the tolerances specified in Table 4.

3.4.2 Transponders:

a) shall demonstrate a reading performance equal to or better than the benchmark transponders identified in Table 5 based upon testing conducted by a competent laboratory under the supervision of the Program Administrator;

b) shall not exceed the combined tolerances for loss rate specified in Table 4;

c) should be reliably machine-readable from application for the lifetime of the animal;

d) shall be reliably machine-readable:

i. using commercially available handheld and panel readers which operate within the bandwidths defined in AS5019-2001, specifically within the transponder response frequency of 124.2+/-2.0kHz for Binary 1 and 134.2 +/-1.5kHz for Binary 0; and

ii. for a minimum of eight years following the application of the animal identification technology in typical Australian conditions; and

e) shall perform consistently when exposed to temperatures ranging from -5°C to 45°C.

Table 4: Tolerances for loss rate

Total loss rate	Physical loss rate	Transponder failure
3.5%	3%	0.5%

NOTE TO TABLE 4 Loss rate is based on any three-year period for the lifetime of the animal.

Table 5: Benchmark transponders

Technology type	Species	Benchmark transponder
Electronic - RFID	Cattle	Texas Instruments High Performance Transponder Circular Inlay: RI-INL-0243-40
Electronic - RFID	Sheep	Texas Instruments 23mm Glass encapsulated Transponder: TRPGP40ATGA
Electronic - RFID	Goats	Texas Instruments 23mm Glass encapsulated Transponder: TRPGP40ATGA

3.5 Reuse and recycling

3.5.1 Reuse or recycling of the transponder shall not be allowed.

3.5.2 The remaining components may be recycled.

4 SPECIFIC REQUIREMENTS FOR NON-ELECTRONIC TECHNOLOGIES

Physical identification technologies

4.1 Physical identification technologies shall support the identification of a group of animals.

4.2 **Numbering**

4.2.1 The primary number shall be:

a) the 8-character PIC; or

b) for Western Australia, the 3-character brand.

4.3 **Additional information**

4.3.1 Additional information which may be printed on the animal identification technology may include:

a) a serial number.

4.4 **Unique numbering**

4.4.1 Where additional information comprises unique numbering, which is printed on matching multiple components, the packaging of the components shall be designed to prevent any disassociation of the matching components.

4.5 **Performance**

4.5.1 The **loss rate** of the physical animal identification technology shall not exceed the tolerances specified in Table 6.

Table 6: Tolerances for loss rate

Total loss rate
3.5%

NOTE TO TABLE 6 Loss rate is based on any three-year period for the lifetime of the animal.

4.6 **Recycling**

4.6.1 The physical components may be recycled.

5 TESTING REQUIREMENTS

5.1 The Program Administrator may require animal identification technologies to undergo laboratory testing from time to time.

5.2 All electronic, chemical, biological or physical testing of animal identification technologies shall only be undertaken by competent laboratories.

6 ONGOING QUALITY CONTROL REQUIREMENTS

General

6.1 Supply of animal identification technologies shall fulfil compliance requirements.

6.2 If required by compliance requirements, before production and dispatch of animal identification technologies, Suppliers must:

a) check the PIC or brand supplied by the producer against the name and address details on the relevant PIC or brand register; and

b) electronically transmit to the NLIS database and other relevant databases information about animal identification technology in the prescribed format.

NOTE Some Australian states and territories require the prescribed format of information to be electronically submitted includes the producer's name and address, date of each order and the date it was dispatched, product field code, PIC and other numbers (if printed on the animal identification technology) and the total number of technology units supplied.

Order validation

6.3 The Supplier shall have a validation procedure which, prior to order fulfilment, checks:

a) the validity of the PIC or brand provided for each order;

b) the authority of the person to make the order; and

c) the correct order is dispatched to the correct customer.

6.4 If the order is for electronic animal identification technologies with multiple components, the Supplier shall have a batch identification system and record the batch of multiple components issued to each order so the batches of multiple components can be accurately correlated with the primary component.

6.5 Prior to the dispatch of any electronic animal identification technology, the Supplier shall check each technology unit to ensure that:

a) its numbering is unique and correctly coded and capable of being reliably read electronically; and

b) the numbering has been correctly and successfully transmitted to the NLIS database and includes the product field code for that NLIS Approved Technology and, where required by compliance requirements, any state or territory database.

6.6 Prior to the dispatch of any order, the Supplier shall check to ensure that:

a) the technology matches that ordered; and

b) the packaging and instructions:

i. match the technology ordered; and

ii. are those included in the scope of approval for that NLIS Approved Technology.

6.7 The Supplier shall maintain copies of orders, including the date each order was dispatched and the corresponding unique identification numbers (including corresponding transponder numbers where RFID technology is used) for a minimum of seven years.

NOTE Records can be kept in electronic form if backup systems are in place.

Management system

6.8 Suppliers of animal identification technologies must maintain a management system that:

a) explicitly includes in its scope and objectives:

i. fulfilment of the Approval Requirements;

ii. identification and management of risks associated with:

1) reconciliation of identification numbers contained in individual animal identification technology units and corresponding numbering in any animal identification system; and

2) compilation, fulfilment and dispatch of orders to ensure correct representation of the individual animal identification technologies are supplied within the order specifications;

b) explicitly includes in the internal audit program of the Supplier the audit of all Approval Requirements on at least an annual basis;

c) identifies all sourcing of components external to the Supplier, and any outsourcing of its production processes, and ensures that the source of those components, or the provision of outsourced activities, are undertaken under an ISO 9001 certified management system;

d) includes a formal complaint register and complaint resolution process which draws on relevant components of ISO 10002;

e) is certified by a competent management system certification body as meeting the requirements of ISO 9001, including consideration by the certification body of:

i. internal audits performed by the supplier relating to the fulfilment of the requirements of this document; and

ii. the extent to which components sourced from outside the Supplier, or activities that are outsourced, fulfil the requirements of this document.

NOTE A competent management system certification body is one that is accredited by a signatory to the International Accreditation Forum (IAF) Multilateral Recognition Arrangement (MRA) as fulfilling the requirements of ISO/IEC 17021-1 with an accreditation scope for ISO 9001 certification. The relevant IAF MRA signatory in Australia is the Joint Accreditation System of Australia and New Zealand (JAS-ANZ).

6.9 Copies of internal audit reports and the external audit reports by the certification body shall be provided to state and territory jurisdictions and the Program Administrator upon request.

Market feedback and complaints management

6.10 Suppliers must alert the Program Administrator of all complaints from any party about technology quality, performance and reliability within the prescribed timeframe.

Nonconformities and corrective action

6.11 When a nonconformity occurs, including those arising from feedback and complaints, the Supplier shall:

a) react to the nonconformity, and as applicable:

i. make an immediate correction to control and stop the nonconformity; and

ii. deal with the consequences;

b) evaluate the need for corrective action to eliminate the cause(s) of the nonconformity, in order that it does not recur or occur elsewhere, by:

i. reviewing the nonconformity;

ii. determining the causes of the nonconformity; and

iii. determining if similar nonconformities exist, or could potentially occur;

c) undertake corrective action if required;

d) review the effectiveness of any corrective action taken;

e) make changes to the management system if necessary;

f) retain documented information as evidence of:

   i. the nature of the nonconformity;

   ii. the severity of the nonconformity as described in Annex A of the Program Rules;

   iii. any subsequent actions taken; and

   iv. the results of any corrective action; and

g) within the timeframe specified, notify the Program Administrator of all major and critical nonconformities as they are identified and include the:

   i. details of the NLIS Approved Technology(ies) including the product field code(s);

   ii. identified nonconformity including all relevant details relating to the:

      1) NLIS Approved Technology(ies) affected;

      2) manner in which the nonconformity was identified (e.g. internal audit, day-to-day operations, complaint or market feedback etc.);

      3) cause of the nonconformity;

      4) the number of NLIS Approved Technology(ies) commercially available which may be affected;

      5) the number of orders that may contain one or more affected technologies;

      6) severity of nonconformity; and

      7) timeframe required for corrective action; and

   iii. progress made towards closing out the nonconformity, including the corrective action taken to close out the nonconformity and, where necessary, the verification of such by an auditor.

NOTE The Program Administrator may require further evidence or verification of corrective action.

6.12 Corrective actions shall be appropriate to the effects of the nonconformities encountered.

6.13 The Supplier shall regularly consider the outputs of analysis and evaluation, and the outputs from internal reviews or audits and external audits, to confirm if there are areas of underperformance or opportunities that shall be addressed as part of continual improvement.

Replacement and product recall

6.14 Suppliers shall have a procedure for recall and replacement of defective products that:

a) applies to the entire batch of NLIS Approved Technologies which may contain a defective product and which may be:

i. currently onsite with the Supplier;

ii. in transit to a customer;

iii. previously received by a customer; and

iv. in use in animals in-market throughout the supply chain; and

b) occurs at the Suppliers own cost.

6.15 Any replacement or recall shall be considered a critical nonconformity with the Supplier's management system and appropriate corrective action undertaken.

6.16 Suppliers shall replace any order which may contain a defective NLIS Approved Technology at no charge whether the subject of a recall or not.

6.17 Suppliers shall inform the Program Administrator of:

a) all replacements or recalls, including any refunds provided; and

b) all complaints about an NLIS Approved Technology.

Reporting

6.18 The Supplier shall provide quarterly reports to the Program Administrator detailing:

a) the number of NLIS Approved Technologies sold for that quarter; and

b) for electronic NLIS Approved Technologies, a reconciliation of the number of technologies manufactured within that quarter with the number uploaded to the NLIS database.

7 DOCUMENT CONTROL

Most recent version	Operative Date	Summary of changes from last version	Approved by
1.0	29/06/2023	First publication	SAFEMEAT

ANNEX A: Specification for the types of technology approved, additional printing and security

(normative)

Table A1: Technologies approved for use on animals and additional printing and security specifications

Species	Technology type	Additional printing	Security
Cattle	Electronic - Low frequency RFID	The words DO NOT REMOVE shall be printed. The NLIS Logo.	When removed, it shall not be possible to reapply the technology securely without evidence of tampering.
Sheep	Electronic - Low frequency RFID	Either of the following shall be printed: • the words DO NOT REMOVE; or • the producer's property name; or • a management identification number; or • a stud identification number. The NLIS Logo.	Shall be tamper resistant to minimise the possibility of unauthorised removal and reuse.
	Non-electronic - Physical identification	The NLIS Logo.	
Goats	Electronic - Low frequency RFID	Either of the following shall be printed: • the words DO NOT REMOVE; or • the producer's property name; or • a management identification number; or • a stud identification number. The NLIS Logo.	Shall be tamper resistant to minimise the possibility of unauthorised removal and reuse.
	Non-electronic - Physical identification	The NLIS Logo.	

ANNEX B: Guidance on dimensions

(informative)

Multiple physical components (i.e. two or more piece)

- The primary component surface area: <14cm^2
- The locking component diameter: <35mm
- Triangular technologies maximum dimensions: <42mm width (at the base) x <40mm height.

Primary physical components (i.e. one-piece)

- Maximum dimensions: <120mm length x 30mm width.

ANNEX C: Letters having meaning

(normative)

Table C1: Letters having meaning

Letter	Meaning
V	Vaccinated with Gudair vaccine
T	Terminal lamb to be slaughtered before first permanent teeth cut
S	Vaccinated for scabby mouth

NOTE Letters shall only be printed on the NLIS Approved Technology if a Supplier has received instructions in writing from a producer to do so.

ANNEX D: Colour system

(normative)

Table D1: Colours approved for use

Species	Breeder		Post-breeder	
	Electronic - RFID	Non electronic – Physical identification	Electronic - RFID	Non electronic – Physical identification
Cattle	White	*n/a*	Orange	*n/a*
Sheep	Yellow; or Year of birth colour – Table D2	Year of birth colour (recommended) – Table D2	Pink	Pink
Goats	Yellow; or Year of birth colour – Table D2	Year of birth colour (recommended) – Table D2	Pink	Pink
South American Camelids	Yellow; or Year of birth colour – Table D2	n/a	Pink	Pink

The year of birth colour system shall colour the physical component in accordance with the Table D2.

NOTE In most jurisdictions, the use of the year of birth colour system is voluntary.

Table D2: Year of birth colour system for sheep and goats

Year	Tag colour	Year	Tag colour
Any year	Post-breeder tags must be pink		
2013	Yellow	2021	Yellow
2014	Red	2022	Red
2015	Sky blue	2023	Sky blue
2016	Black	2024	Black
2017	White	2025	White
2018	Orange	2026	Orange
2019	Light green	2027	Light green
2020	Purple	2028	Purple

NOTE NLIS Approved Technology shall only be supplied in the colour specified in writing from the producer and substitution shall not be allowed.