Final report

Determination of control and traceability arrangements that will support the Livestock Global Assurance Program

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Abstract

At the request of the Australian Livestock Exporters' Council (ALEC), a new standard for control and traceability under the Livestock Global Assurance Program (LGAP) was developed by Schuster Consulting Group on behalf of AniMark.

The new LGAP Standard, ***LGAP 1004 Livestock assurance - Requirements for traceability systems used by Operators and Facilities*** (LGAP 1004 or the Standard), has been researched, drafted, reviewed, finalised, and adopted by AniMark. This included a period of public review and comment and consideration by both the AniMark Standards Committee and Board. In addition, amendments to the existing LGAP Standards and Rules were made and adopted to enable the operation of LGAP 1004.

Requirements for LGAP 1004 were drafted specifically to address the challenges identified through this project's research stage and in consideration of the MRAG Asia Pacific recommendations, the related ALEC resolutions and the complexities and practicalities which exist within the environment LGAP operates.

LGAP 1004 is a traceability system standard that sets requirements for Traceability System Providers. The Standard has been written to accommodate the diversity of practices and the complexities that currently exist in relation to controlling and tracing livestock in a decentralised manner across an international market.

The project timeline was scheduled to occur over a 16-month period. The project was successfully delivered in advance of the scheduled timeframe (<12 months) and to budget, with all objectives and reporting milestones met.

The AniMark Board has set an ambitious target implementation date of 1 November 2021 to make LGAP 1004 certification services available, noting that this date does not impede the current availability of LGAP, which has been available to Australian livestock exporters to use to assist with their ESCAS compliance obligations since October 2020.

While outside the scope of this project, AniMark will need to undertake significant work to make LGAP 1004 certification services available.

Livestock exporters in Australia, as well as their overseas supply chain partners, can demonstrate their commitment to improving traceability performance in one or all export markets, by achieving LGAP 1004 certification themselves for their own traceability system or by using a third-party provider with LGAP 1004 certification.

Abbreviations

ALEC	Australian Livestock Exporters' Council Ltd
C&T	Control and traceability under the ESCAS regulatory framework
Department	Australian Government Department of Agriculture, Water and the Environment
EAN	Export Advisory Notice
ESCAO	Exporter Supply Chain Assurance Operations
ESCAS	Exporter Supply Chain Assurance System
GPS	Global Positioning System
ISC	Integrity Systems Company Ltd
ISO	International Organization for Standardization
LEP	Livestock Export Research, Development and Extension Program
LGAP	Livestock Global Assurance Program
LISC	LGAP Implementation Steering Committee
MLA	Meat & Livestock Australia Limited
NLIS	National Livestock Identification System
NTPS	National Traceability Performance Standards
OIE	World Organisation for Animal Health
QA	Quality assurance
RFID	Radio Frequency Identification
UAE	United Arab Emirates
UHF	Ultra-high frequency RFID which typically operates in the range of 860-960MHz (Schuster, 2020)
WTO	World Trade Organisation

Executive summary

Background

The Exporter Supply Chain Assurance System (ESCAS) places regulatory responsibility on Australian exporters of livestock to guarantee measurable animal welfare outcomes throughout the entire supply chain to the point of slaughter in overseas markets.

Australian exporters seeking to export feeder or slaughter cattle, buffalo, sheep and goats must show that their supply chain meets the World Organisation for Animal Health (OIE) guidelines for animal welfare, enables animals to be effectively traced or accounted for by exporters within a supply chain through to slaughter, has appropriate control through reporting and accountability, and is independently verified and audited.

The control and traceability (C&T) aspects under ESCAS are designed to ensure livestock remain within an approved supply chain, so that their handling and slaughter is carried out in accordance with international guidelines for animal welfare. In this manner, C&T is a means of assuring animal welfare.

The Australian livestock export industry has supported the development and implementation of the Livestock Global Assurance Program (LGAP) to assist Operators (exporters and importers) and Facilities (feedlots, farms, depots and abattoirs) to demonstrate compliance with ESCAS. AniMark Ltd was established to administer LGAP by the Australian livestock export industry and the grassfed cattle, sheep and goat production sectors.

Project purpose and approach

Following a request from ALEC to develop a new standard to further support C&T outcomes under LGAP, this project was initiated to review the existing requirements, standards and approaches to managing C&T under ESCAS, compare these to the current C&T requirements of LGAP and develop contemporary, robust requirements based on this analysis for suppliers of C&T systems that are used by parties certified under LGAP. Conformance with these requirements would be verified through an audit of suppliers by independent and appropriately experienced auditors.

AniMark engaged Schuster Consulting Group to undertake the project in two stages over a 16-month timeframe.

Stage 1 involved consultation with the Department, exporters, third party providers of C&T systems as well as industry stakeholders, an analysis of ESCAS noncompliance reports and a literature review of existing standards and approaches to managing C&T, and consideration of reports delivered by MRAG Asia Pacific.

The information gathered through the consultation and review process was analysed to identify the current C&T challenges under ESCAS, determine how these challenges would be addressed by LGAP in its current form, what gaps existed and establish how these gaps could be overcome under LGAP. Recommendations were formulated along with implications for the implementation of the recommendations.

The findings, outcomes and recommendations were provided in Milestone 1 and 2 Reports.

Stage 2 involved implementing the recommendations through the technical development of a standard to address the gaps identified as well as updating the existing LGAP Standards and Rules. The process also included review by AniMark's Board Sub-committees, a period of public comment and final adoption by the AniMark Board.

The final deliverables, being the new Standard and the updated LGAP Standards and Rules are contained within this Final Report.

Summary of findings and conclusions

C&T under ESCAS is based on a supply chain model which considers consignments and relies on declarations of compliance by exporters that certain C&T requirements are being met.

No overall standard or detailed requirements for C&T exist under ESCAS; however, a standard for Vietnam was released in 2015. Notwithstanding this, there are a number of C&T stipulations across various Exporter Advisory Notices (EANs) and in guidance materials.

The Department requires that the declarations made under ESCAS be supported by evidence of the ongoing conduct of these arrangements throughout the supply chain. The exporter, as the regulated party, is responsible for C&T and must be able to demonstrate that their supply chains meet ESCAS requirements at all times.

Exporter's identified ESCAS C&T requirements as unclear, impractical, overly onerous and that they do not apply equitably to those most able to influence C&T in-market. The actions taken by the Department in response to reports of noncompliance were considered by exporters to be disproportionate when considered in light of the small number of livestock involved in C&T issues as a subset of the total numbers exported.

An analysis of ESCAS Performance Reports 2015-2019 indicates that C&T noncompliance represents the majority of reported ESCAS noncompliances (80%). Cattle had higher occurrences of noncompliance than sheep. The ESCAS Performance Reports indicate the reason found by the Department for the C&T noncompliance is predominately due to in-market noncompliant behaviour (59%) evident either through the falsification of information (15%) or a disregard for compliance (44%). In other instances, the noncompliance was due to a lack of oversight of data and information or a lack of control by the exporter over their supply chain, which contributed to leakage.

The ESCAS C&T requirements are ambiguous and there is significant variability in how these requirements are interpreted and therefore individual exporter's subsequent approaches and systems. This contributes to an inconsistent application in-market, difficulty in improving practices and presents a risk to the industry as a whole.

Exporters and their supply chain partners have, in general, invested substantially in approaches to C&T compliance. Some exporters and importers have developed their own proprietary databases and technology systems while others utilise the services of third-party providers.

Traceability for the livestock export industry is multifaceted and relies on a balanced combination of on-ground resourcing to verify events, an effective management system and readily and rapidly accessible data. Where any one of these factors is diminished, so too is the reliability of the process, thereby increasing the risk of noncompliance.

The consultation, research and analysis identified 37 challenges associated with maintaining C&T of Australian livestock in overseas markets. These challenges can be categorised as relating to:

- Commerciality and legality
- Variability
- Responsibility
- Reliability
- Veracity
- Technology

The dominant themes related to responsibility for C&T and variability within approaches and results.

An assessment of the existing LGAP Certification Requirements demonstrates that the fundamentals of C&T are embedded in the original LGAP design in a manner that is equivalent to regulatory requirements, consistent with ISO and WTO expectations, adheres to the principles of traceability and ensures all parties who contribute to C&T are accountable. This is supported by the Department's recognition of LGAP as ESCAS equivalent in October 2020 (Export Advisory Notice 2020/25).

LGAP provides clear expectations for C&T and distributes responsibility more appropriately throughout the supply chain. In its current form once implemented, and provided there is genuine conformity by certified parties, LGAP has the potential to alleviate many of the challenges identified. The remainder of the challenges identified can be addressed by broadening the scope of LGAP and introducing a standardised approach to systems used to demonstrate ESCAS C&T compliance. This would require the development of an additional standard as well as modifications to the existing LGAP Certification Requirements.

Such an approach would define the requirements for C&T systems and rules to govern how such systems are assessed and used. This would also define the obligations of system owners seeking to have their systems approved by AniMark for use by Operators or Facilities certified under LGAP.

The proposed approach would address the identified challenges associated with maintaining C&T of Australian livestock in overseas markets by:

1. specifying data formats to assist security and compatibility;
2. improving data accessibility and security, for example timeliness, storage and transfer;
3. specifying data retention obligations;
4. providing visual recording (picture) guidelines;
5. including third-party providers into the assurance framework and clarifying responsibilities of exporters, facilities and system providers;
6. strengthening data verification expectations;
7. enhancing required competencies for personnel in relation to C&T;
8. clarifying the difference between control, traceability and surveillance;
9. specifying traceability response times; and
10. introducing trigger events for traceability reviews.

This approach would augment the LGAP Standards and Rules and create a rigorous means for exporters to meet ESCAS C&T obligations through the inclusion of systems and system providers under LGAP.

By conforming with the LGAP Standards in their own right and using a system that conforms with the C&T system standard, be it their own system or a third-party system, a certified entity can be confident that they fulfil their obligations under LGAP and therefore ESCAS.

The LGAP Standards were designed to be adaptable to allow additional standards to be introduced as required. As such, a standard for C&T systems fits under the existing structure of LGAP with only minor amendments to the existing LGAP Standards to recognise and give effect to the new standard being required. The LGAP Rules currently have the structural arrangements in place to enable this approach. Some minor modifications will be required to include the new standard and system providers as parties to LGAP as well as the process for approving these providers and the systems.

While no standard or approach will eliminate deliberate noncompliant or fraudulent behaviour, LGAP and the proposed C&T system standard will aid the detection of and should deter such behaviour.

The introduction of LGAP and a new C&T system standard will clarify obligations, introduce consistency in approaches and encourage conformity. Genuine conformity with LGAP, including the new C&T system standard, will help minimise industry risks associated with C&T.

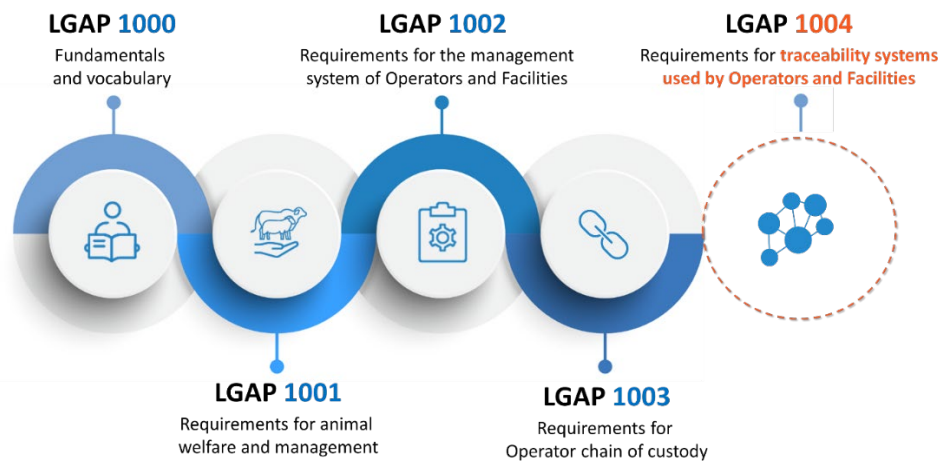
Recommendations

Based on the outcomes of Stage 1, four recommendations were made:

R1	Introduce a standardised approach to the use of C&T systems under LGAP. It is recommended this be achieved through the development of an additional standard for C&T systems along with modifications to the existing LGAP Certification Requirements to recognise and give effect to the new standard.
R2	Develop the new standard for C&T systems as LGAP 1004 and this include outcomes-based requirements for both the C&T systems and the providers of such systems (who may be internal or external providers).
R3	Modify the existing LGAP Standards to recognise the standardised approach to the use of C&T systems under LGAP and give effect to the new standard.
R4	Modify the existing LGAP Certification Rules to recognise the standardised approach to the use of C&T systems under LGAP and give effect to the new standard.

The introduction of a new Standard was proposed as ***LGAP 1004 Livestock assurance – requirements for traceability systems used by Operators and Facilities***, as shown in Fig. E1.

Figure E1: Introduction of a new Standard under LGAP



Adapted from AniMark LGAP training materials

Implementation of the recommendations

Requirements for LGAP 1004 were drafted specifically to address the challenges identified through the research undertaken in Stage 1 and in consideration of the MRAG Asia Pacific recommendations, the ALEC resolutions and the complexities and practicalities which exist within the environment LGAP operates.

The existing LGAP Standards were also amended to give the new standard effect and address the challenges identified in Stage 1.

The AniMark Standards Committee convened in February 2021 and considered the draft Standard. Following a resolution endorsed by all ten Committee members, LGAP 1004 and the other updated LGAP Standards were released for a 60-day public comment period, in accordance with best practice standards development and AniMark's governance framework for standards development.

The Standards Committee met in June 2021 to consider 189 comments received across all five of the LGAP Standards, including the new LGAP 1004 Standard.

In total, 70% of comments were accepted or partially accepted by the Committee and no change was required for 21% of comments. The remaining 8% required no action and were noted, or in 3% of the cases, the comments were no longer relevant due to changes made in relation to other comments.

The Department provided 21 comments separately to the public comment process, of which 29% were accepted or partially accepted, 57% required no action and 14% were no longer relevant due to changes made in relation to other public comments.

The project team enacted the Committee's determinations regarding the feedback and the Committee members subsequently unanimously approved the five Standards and recommended them to the AniMark Board for adoption, which occurred on 23 June 2021.

The LGAP Rules were also amended to give the new Standard effect and introduce 'Traceability System Providers' into the LGAP framework. These amendments included the development of a new risk assessment for Traceability System Providers which would determine their surveillance frequency.

The final draft LGAP Rules were provided to the AniMark Rules and Integrity Committee for review, in June 2021.

Final acceptance of the LGAP Rules is dependent on the Exporter Supply Chain Assurance Operations (ESCAO) approved arrangement process AniMark is undergoing with the Department, the timeframe for which is outside the scope of this Project. Any amendments required to the LGAP Rules as a result of the approved arrangements process will be managed by AniMark.

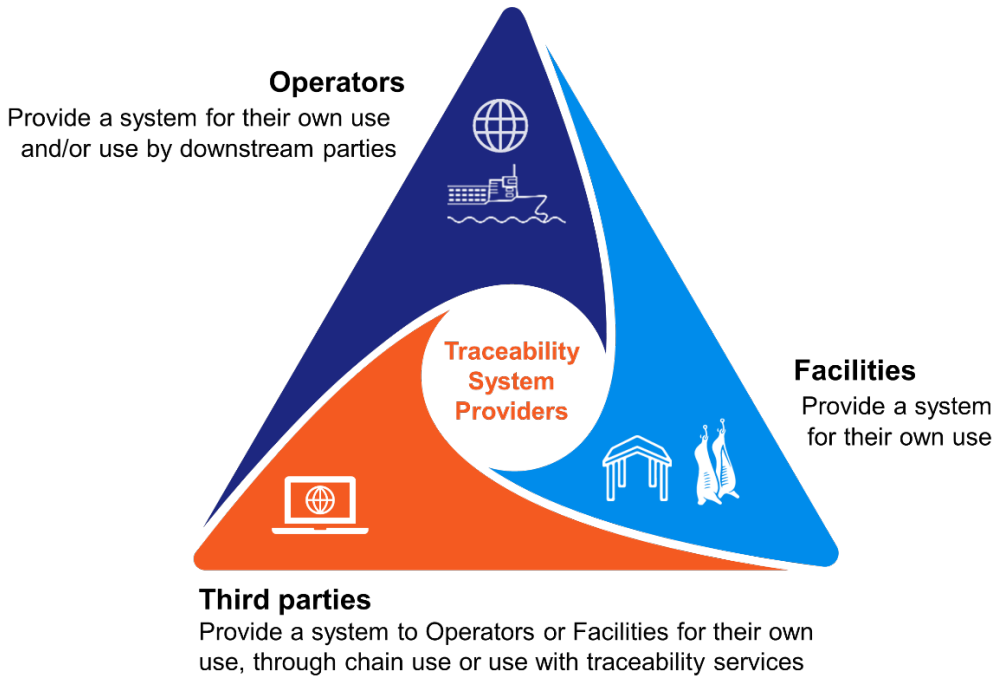
Supporting traceability under LGAP

LGAP 1004 is a traceability system standard that sets requirements for providers of traceability systems (Traceability System Providers).

The Standard has been written to accommodate the diversity of practices that currently exist in the different markets where, as shown in Fig. E2, a Traceability System Provider may be:

- an Operator using their own inhouse system or providing a system to their downstream Operators and Facilities to use;
- a Facility using their own system; or
- a third party providing a system to Operators or Facilities.

Figure E2: Types of Traceability System Providers under LGAP



The approach also incorporates amendments to the existing LGAP Standards and Rules to enable the new Standard and new parties to the Program.

In addition, LGAP 1004 provides requirements that address the various situations which exist where different parties may perform activities related to traceability (e.g. scanning livestock, maintaining records, performing traceability exercises etc.) or provide the necessary equipment (such as ear tags or devices etc.) as shown in Fig. E3.

Where such resources are provided by the Traceability System Provider, they are considered 'traceability services' under LGAP 1004 and requirements are placed on the Traceability System Provider. Where these resources are provided by an Operator or Facility (for their own use), requirements are placed on these parties under LGAP 1001 and 1002.

Figure E3: The use of resources under LGAP

Building on the recommendations from the MRAG Asia Pacific report and in consideration of the challenges, practicalities and complexities associated with C&T identified through this project, LGAP 1004 will:

- enable for a more equitable distribution of responsibility and accountability throughout livestock supply chains;
- provide greater clarity regarding appropriate traceability practices, including specifying image resolutions (where used), timeframes to locate livestock (10 days), requiring entities to have processes for lost and replacement tags and mandating periods for data storage;
- specify monitoring requirements that will help to detect and deter leakage;
- allow for third party providers of traceability systems to be integrated into the LGAP framework; and
- facilitate the continual improvement methodology, whereby certified entities moving out of conformity have an opportunity to address issues and maintain their certification.

Every effort was made to accommodate the ALEC requests emanating from the MRAG Asia Pacific recommendations; however, during the deliberations of the Standards Committee it was identified that several requirements were not practical to incorporate, these key areas included:

- Mandating the use of GPS – the Committee acknowledged that GPS is not always available or accessible and the Standard needed to allow for an alternative (e.g. a fixed reference point clearly visible in the frame of the camera);

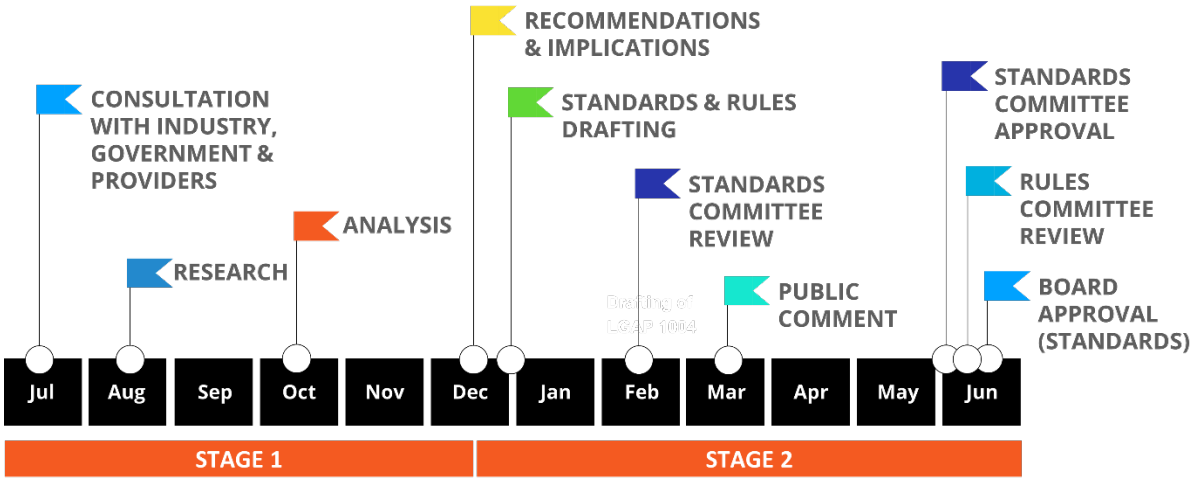
- Requirement for "*Real time monitoring*" – the Standard needed to accommodate the diversity of animal management systems around the world, and it was determined that in the first instance, a requirement of 10 days to locate an animal would be the most practical timeframe to mandate, as opposed to real time or instantaneous;

- Development of "*levels of tolerances for mortalities, emergency slaughters and tag replacements*" – the Committee was unable to formulate a practical approach to include prescriptive tolerance levels that would suit different markets and meet the Department's expectations, thereby meeting ESCAS requirements. It was resolved that an outcomes-based approach would best accommodate the diversity of animal management systems and ensure that Traceability System Providers have procedures that monitor, detect and deter fraud.

Project delivery

The project timeline was ambitious and scheduled to occur over a 16-month period. The project was successfully delivered in advance of the scheduled timeframe (<12 months; Fig. E4) and to budget, with all objectives and reporting milestones met.

Figure E4: Project timeframe and key components



Implementation of the new arrangements

LGAP 1004 has been written as a voluntary standard, which is available for Operators, Facilities and Traceability System Providers to adopt as they see fit. Operators and Facilities can demonstrate their commitment to improving traceability performance in one or all markets, by achieving LGAP 1004 certification for their own traceability system or using a third-party provider with a traceability system certified to LGAP 1004.

While outside the scope of this project, AniMark will need to undertake significant work to make LGAP 1004 certification services available, including:

- update AniMark's ESCAO Approved Arrangement application and/or secure the Department's approval of a significant variation of the ESCAO Approved Arrangement (depending on the Department's application approval status);

- finalise updates to the LGAP Rules based on the outcomes of the ESCAO Approved Arrangement process and complete necessary governance processes;

- commission updates to the AniMark IT Conformance System, to accommodate the new certification requirements;

- develop guidance materials, checklists and templates for Operators, Facilities, Traceability System Providers, Approved Certification Bodies and Approved Auditors;

- develop training materials and delivery of training for Operators, Facilities, Traceability System Providers, Approved Certification Bodies and Approved Auditors; and

- secure an extension of services from Approved Certification Bodies, negotiate fees and undertake auditor assessment and approval.

The AniMark Board has set an ambitious target implementation date of 1 November 2021 to make LGAP 1004 certification services available, noting that this date does not impede the current availability of LGAP, which has been available to exporters to use to assist with their ESCAS compliance obligations since 28 October 2020.

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1. Background

Introduced in 2011 in response to community concern over the treatment of livestock exported from Australia to Indonesia, the Exporter Supply Chain Assurance System (ESCAS) places a regulatory responsibility on Australian exporters to guarantee measurable animal welfare outcomes throughout the entire supply chain to the point of slaughter in overseas markets.

Australian exporters seeking to export feeder or slaughter cattle, buffalo, sheep or goats must demonstrate that their supply chain meets World Organisation for Animal Health (OIE) guidelines for animal welfare, enables animals to be effectively traced or accounted for by exporters throughout a supply chain to the point of slaughter and has appropriate control through reporting and accountability. This is verified through independent auditing. A key principle of the ESCAS regulatory framework is to maintain control and traceability (C&T) of all livestock through the supply chain.

The Australian livestock export industry has supported the development and implementation of the Livestock Global Assurance Program (LGAP) to assist in demonstrating compliance with ESCAS. AniMark Ltd was established by the Australian livestock export industry and the grassfed sheep, cattle and goat production sectors in 2018 as the owner of LGAP.

The principal requirements of LGAP are contained in five documents, as developed under the Livestock Export Program (LEP) project W.LIV.3027[1] and applicable to Operators (exporters and importers) and Facilities (feedlots, farms, depots and abattoirs):

- *LGAP 1000 Livestock assurance - Fundamentals and vocabulary* which describes the fundamentals of livestock assurance and specifies the vocabulary (terms and definitions) to be used across the LGAP Standards (LGAP 1000).
- *LGAP 1001 Livestock assurance - Requirements for animal welfare and management,* which specifies requirements for animal welfare, health and management; the personnel of Operators and Facilities; infrastructure and equipment; livestock identification and movement; transport; slaughter and processing (LGAP 1001).
- *LGAP 1002 Livestock assurance - Requirements for the management system of Operators and Facilities* which specifies requirements for the management system of Operators and Facilities that manage livestock, including leadership and responsibilities; risk management, processes; documented information, monitoring and records; management review and internal audit; nonconformities and corrective actions (LGAP 1002).
- *LGAP 1003 Livestock assurance - Requirements for Operator chain of custody* which specifies the requirements for livestock traceability and chain of custody (LGAP 1003).
- The *LGAP Certification Rules* (LGAP Rules) which outline the responsibilities, obligations and expectations of all parties operating under the Program.

[1] Schuster A (2016). *W.LIV.3027 - Development of a Global Assurance Program for the Livestock Export Industry*. Meat & Livestock Australia Limited

In 2019 the Australian Livestock Exporters' Council (ALEC) made a series of resolutions based on recommendations made by MRAG Asia Pacific after an investigation of leakage in Vietnam. Two of these resolutions were directed to AniMark for consideration under LGAP (resolutions 1 and 4). The focus of the ALEC direction to AniMark was to develop a new standard to further support C&T outcomes under LGAP.

Following the request from ALEC, this project was initiated to review existing requirements, standards and approaches to managing C&T, compare these to the current C&T requirements under LGAP, understand the challenges associated with managing C&T faced by exporters, analyse the LGAP Standards and Rules to establish areas of complementarity or gaps and develop contemporary, robust requirements based on this analysis for providers of C&T systems used by parties certified under LGAP. Conformance with these requirements would be verified through an audit of providers by independent and appropriately experienced auditors.

The project was funded by the LEP, with Schuster Consulting Group Pty Ltd appointed by AniMark through a competitive, international tender process.

The objectives of this project and the section in this report and the Milestone Reports in which they are addressed, are outlined in Table 1.

This Final Report provides a summary of the first two stages with detail having been provided in the submitted Milestone Reports.

Appendix 1 and 2 provide the final LGAP Standards as approved by the AniMark Standards Committee and subsequently adopted by the AniMark Board and Appendix 3 provides the final LGAP Rules as provided to the AniMark Rules and Integrity Committee at the completion of this project.

Table 1: Project objectives

Objective	Report section
STAGE 1	
ESCAS and Department expectations	
Consult with the Department regarding its expectations for C&T and conduct an analysis of historical ESCAS control and traceability noncompliance reports, highlight key themes and identify high-risk markets, species and practices.	Final Report: Section 4 Milestone 1: Section 5
Exporters and market approaches	
Utilising the relevant resolutions of ALEC as a reference point, engage with up to 12 exporters and third-party control and traceability service providers (to be agreed with AniMark) to understand their contemporary concerns regarding C&T issues and challenges for their ESCAS compliance obligations. The MRAG report focused on Vietnam will serve as a reference point for that market; however, similar consideration will need to be given to other live export markets and will draw on other industry research and reports where relevant.	Final Report: Section 4 Milestone 1: Section 5
Undertake a detailed examination of six export markets to be agreed with AniMark (but which must include Indonesia, Vietnam, Japan and Kuwait) which includes reviewing existing third-party, foreign government and exporter C&T systems, including interrogation of system standards, rules and operations in all markets.	Final Report: Section 4 Milestone 1: Section 5
Challenges	
Define the challenges associated with maintaining control and traceability of Australian livestock, including: • commercial feasibility; • existing program considerations – e.g. amendments to LGAP Standards and/or Rules; • process and participant considerations – e.g. facility capability, acceptance; • stakeholder expectations – e.g. industry and government; • governance and legal risks and sovereign considerations including data collection, ownership and retention/storage in agreed sovereign jurisdictions as well as regulatory obligations under ESCAS and tolerance levels. The Consultant and AniMark will agree where international legal advice is required and this will be paid for separately by AniMark; • technological aspects – including how emerging but not yet fully implemented technologies may be allowed as they become commercially available and explore issues with prescribing technology through standards (e.g. GPS usage, automation, imaging quality, real-time monitoring systems, etc.); and • alignment with expectations for standards and innovation from ISO and WTO.	Final Report: Section 4 Milestone 1: Section 5 / 6
Consider the ramifications from the two MRAG reports in relation to C&T and Vietnam. This is likely to require collaboration with the authors of the two MRAG reports.	Final Report: Section 4 Milestone 1: Section 5
LGAP approach to C&T, fit-gap analysis and solutions	
With consideration to the ESCAS requirements, including the Vietnam C&T Standard and any other relevant standards (either published or in development), assess the existing LGAP Standards and Rules and consider where improvements can be made within the boundaries of an internationally recognised, voluntary conformity assessment program.	Final Report: Section 4 Milestone 1 Section 5 / 6 / 7

STAGE 2	
Recommendations	
Taking into account all the findings of Stage One, provide a recommendation to AniMark on whether the C&T requirements would be best achieved through the development of a separate Standard or whether the C&T obligations should be developed as requirements against an existing LGAP Standard, and assist AniMark to determine the preferred approach (called below, Standard).	Final Report: Section 4 Milestone 2
Solution development	
Develop a Standard that any supplier of C&T systems anywhere in the world can be assessed against. The Standard will support the industry to demonstrate conformity with C&T expectations based on an outcomes-focused system standard. At a minimum, the Standard must: ○ take account of the issues identified in Stage 1 (e.g. commercial viability, participant and stakeholder expectations, the existing LGAP Standards and Rules and structure, governance, legal and risk, technological aspects and alignment with expectations from ISO and WTO, etc.); ○ ensure compliance with ESCAS; ○ align with existing relevant standards for livestock movement in the European Union and existing foreign government programs; ○ comply with all relevant laws; ○ comply with the AniMark style guide; and ○ be written and presented in a manner consistent with the existing LGAP Standards. The LGAP Standards were developed using the nomenclature, structure, syntax, terms and verbal forms of expression from: ▪ ISO/IEC Directives, Part 2: Rules for the structure and drafting of International Standards (6th Edition, 2011); ▪ ISO/IEC 17007:2009: Conformity assessment - Guidance for drafting normative documents suitable for use for conformity assessment; and ▪ ISO/IEC Guide 59:1994: Code of good practice for standardization.	Final Report: Section 4 Appendix 1
Develop rules detailing obligations of all parties, including auditors, that are required for the operation of the Standard and that are not already included in the LGAP Certification Rules (Rules).	Final Report: Section 4 Appendix 3
Provide the draft Standard and Rules to AniMark in Word format, along with a Milestone Report as set out in the MLA Reporting Requirements.	Final Report: Section 4 Appendix 1, 2, 3
Upon receipt of the draft Standard and Rules, in a form acceptable to AniMark, AniMark will apply its standards development process, which includes the requirement for any standard to be adopted by AniMark to undergo a 60-day public comment period and consideration and approval by the AniMark Standards Committee and Board.	Final Report: Section 4
The Consultant must assist AniMark through its standards development process and make any amendments to the Standard and Rules where required.	Final Report: Section 4 Appendix 1, 2, 3

2. About the company undertaking the project

Founded in 2004, Schuster Consulting Group Pty Ltd has developed a reputation as an agile consulting company renowned for delivering high quality results with projects often involving complex issues and diverse stakeholders. Schuster Consulting focuses on projects which require expertise in the areas of:

- ✓ Strategy and Planning
- ✓ Project and Program Management
- ✓ Standards and Conformance
- ✓ Implementation and Engagement

Schuster Consulting Group has long-standing experience across national and international projects which span a number of domains including production systems, animal welfare, sustainability, food safety, traceability, technology, environmental stewardship, veterinary medicines, biosecurity, provenance and production claims, compliance and integrity systems and assurance and verification programs.

In particular, Schuster Consulting Group has undertaken a number of reviews and assessments of livestock traceability approaches globally and domestically and has an in-depth understanding of the Australian livestock export industry gained through more than 16 years of involvement with stakeholders in Australia and in Australia's livestock export markets.

Personnel from Schuster Consulting Group are also directly involved in standards setting or review and assurance activities at national and international levels in the areas of animal welfare and management, traceability, food safety, product integrity, environmental management, risk management and supply chain assurance.

Schuster Consulting Group was appointed to the project as a result of a competitive international tender process undertaken by AniMark.

3. Methodology

The project was undertaken in two distinct stages: Stage 1 consisted of research and analysis and Stage 2 consisted of formulating recommendations and then implementing the recommendations.

3.1 Stage 1

Stage 1 of the project was undertaken in a number of phases to understand and analyse:

- C&T under ESCAS;
- the concerns of exporters and market considerations;
- the ALEC resolutions and underlaying MRAG Asia Pacific recommendations;
- traceability in supply chains within other programs and industries;
- the challenges and themes of C&T under ESCAS;
- the approach to C&T under LGAP; and
- whether LGAP will resolve the challenges (i.e. there is a 'fit') identified or if there is a gap that requires resolution.

3.1.1 C&T under ESCAS

A thorough examination of the requirements and functioning of ESCAS C&T was carried out by:

- documenting the background and basis of C&T under ESCAS;
- examining the requirements of C&T and how they are intended to be applied;
- consulting with the Department to understand their expectations of C&T under ESCAS;
- analysing ESCAS noncompliances by classification, source of the report, species, market and year;
- documenting the Department's response to reports of noncompliance including their approach to investigations, noncomplying practices identified and actions taken;
- categorising the reason or cause of ESCAS noncompliances;
- analysing approaches of exporters to compliance and to noncompliance; and
- analysing actions taken by exporters to address noncompliances.

This examination involved:

- video conference interviews with Department officers to understand requirements and expectations;
- reviewing the relevant ESCAS documents and reports published by the Department, including information available from the Department's website as well as the ESCAS Animal Welfare Standards, the ESCAS C&T Standard for Vietnam and the various Export Advisory Notices (EANs) related to C&T released since 2011; and
- analysing all publicly available ESCAS Performance Reports from 2015 to 2019.

3.1.2 Exporter concerns and market considerations

The concerns of exporters in relation to C&T under ESCAS and other market considerations were collected through a series of consultative interviews with stakeholders. These interviews were held via video conferences and were scheduled to be completed throughout August; however, due to the limited availability of exporters, this was unable to be completed until the second week of October.

Consultation with exporters was undertaken on the understanding that a report was to be generated in accordance with the terms of reference and the information provided used accordingly. To enhance the quality of the data collected and in appreciation of the sensitivities surrounding C&T, an undertaking was given that the information from the interview process would be deidentified or used in aggregate form only. The interview process and questions allowed exporters to raise their concerns as well as:

- establish the exporters' understanding of C&T requirements under ESCAS;
- understand exporters' approaches to demonstrating C&T compliance, market to market and species to species, including the collection, sharing and reporting of data, reporting timeframes, in-market activities and resources, and approaches to identifying tampering and verifying traceability information;
- identify issues and challenges exporters have with C&T under ESCAS;
- establish the role risk plays in the different approaches to C&T;
- understand how anomalies, issues, incidents and noncompliance are identified and addressed, including reports of noncompliance from the Department and to the Department; and
- understand the use of third-party systems.

The project target was to consult with up to 12 exporters. Nine exporters participated in the consultation phase and several others declined the opportunity. Schuster Consulting Group consulted widely with other stakeholders and conducted a broad literature review which included analysing the three reports prepared by MRAG Asia Pacific (2017, 2018 and 2019).

Consultation with third-party C&T providers required an introduction from exporters and involved a similar approach. Questions for providers focused on understanding:

- how the system works, from export to confirmation of death in-market. For example, identifying the steps involved in C&T along the supply chain, including during transport, movements in and out of facilities, while animals are held in a facility and at slaughter;
- how the data is collected and recorded, including who performs these tasks, timeframes between data collection, data uploading and receipt of data, formats used to share and store data, timeframes for data storage;
- how anomalies are currently detected in traceability, including data tampering, and what actions are taken when anomalies are detected; and
- the access levels and rights to the data collected and stored in the system, and access to such data by third parties, such as auditors.

Interviews were held with three third party system providers (including one domestic provider not currently used by the live export industry). One system provider did not respond to requests to participate in the research.

Consultation with other stakeholders was designed to allow them to express their considerations for C&T under ESCAS and LGAP. Interviews were conducted with:

- ALEC
- ISC
- LiveCorp
- MLA
- MRAG Asia Pacific

Discussions with AniMark were ongoing during the course of the project and weekly updates were provided in a template agreed between AniMark and Schuster Consulting Group.

3.1.3 Traceability, traceability systems and standards

A synthesis of the contemporary approach to traceability in supply chains, traceability systems and standards outside the livestock export industry was performed to ensure the outcomes from this project considered all available technologies, solutions and standards. This involved reviewing:

- Information related to the National Livestock Identification System (NLIS) including the National Traceability Performance Standards (NTPS).
- Information and requirements related to traceability systems in other countries.
- Global Standards 1 (GS1) related information (as the preeminent authority on traceability standards).
- The OIE general principles on identification and traceability of live animals.
- Identification and traceability expectations provided in ISO standards.
- Other conformity assessment program approaches to traceability.
- Information on data sharing across international borders.

The review of the literature included consideration of traceability in:

- Agricultural products
- Biotechnology transportation
- Food safety
- Forestry
- Marine products
- Medical instruments
- Software

The Milestone 1 Report provides a bibliography and references for all literature that was reviewed. Many of these items were also considered in the development of LGAP.

3.1.4 Challenges and themes of C&T

The results of the stakeholder consultation (including that with the Department, exporters and other stakeholders described above) were used in conjunction with the analysis of ESCAS and market-to-market factors as well as the literature review to identify the key challenges and themes of C&T associated with the export of livestock.

3.1.5 C&T under LGAP

A thorough examination of the requirements and function of the LGAP Standards and Rules was carried out to identify the key aspects of LGAP that currently support C&T as well as contemporary approaches to traceability, systems and standards identified through the literature review.

3.1.6 Fit/Gap analysis

An analysis was then undertaken to determine how challenges related to C&T under ESCAS would be addressed by LGAP in its current form, what gaps exist and how these could be addressed under LGAP. This was prepared as a 'Fit/Gap' analysis.

3.1.7 Milestone 1 Report - Findings

The Milestone 1 Report provided the results of the first stage of this project. This included analysis of consultation with the Department, exporters, third party providers of C&T systems and industry stakeholders as well as analysis of ESCAS noncompliance reports, a literature review of existing standards and approaches to managing C&T under ESCAS and consideration of reports delivered by MRAG Asia Pacific.

The analysis identified the current C&T challenges under ESCAS, how these challenges would be addressed by LGAP in its current form, what gaps exist and how these could be overcome under LGAP.

3.2 Stage 2

Stage 2 of the project involved:

- consideration of the findings of Stage 1;
- formation of key recommendations and implementation implications;
- drafting the new Standard;
- updating the existing LGAP Standards;
- engaging with ALEC;
- updating the LGAP Certification Rules;
- formulating a new risk assessment for traceability system providers; and
- consideration by AniMark's Board and Subcommittees.

3.2.1 Milestone 2 Report - Recommendations

The findings from Stage 1 were analysed and recommendations were developed to address the challenges identified. The implications of implementing these recommendations were also considered. The Milestone 2 Report provided these recommendations and implications.

3.2.2 Drafting of the new standard and updating the existing LGAP Standards

Requirements for the new standard were drafted specifically to address the challenges identified through the research undertaken in Stage 1 and in consideration of the MRAG Asia Pacific recommendations and ALEC resolutions. The drafting of the new standard was an iterative process occurring December 2020-February 2021 and involved consultation with AniMark personnel.

Once the new standard was in a stable draft form, consideration was then given to the existing LGAP Standards and areas identified in the Milestone 2 Report which would need to be amended to give the new standard effect and address the challenges identified in Stage 1.

3.2.3 Updating the LGAP Rules and formulating a new risk assessment

As the development and updating of the LGAP Standards progressed, the LGAP Rules were amended to reflect the introduction of new parties under LGAP. The drafting occurred between February - May 2021 and included the development of a new risk assessment under LGAP.

Under LGAP, risk assessments are used to establish a risk rating for each Operator and Facility. The risk assessment considers a number of risk factors; those being events or causes of adverse risk that would impact a Facility or Operator's ability to conform with the LGAP Standards and Rules and the controls in place to:

- reduce the likelihood of the adverse risk event occurring;
- minimise the impact of the risk event; or
- remove the possibility of the adverse risk event occurring.

The types of factors considered during the risk assessment vary depending on the type of Operator or Facility being assessed. Risk factors related to risks associated with traceability, monitoring of nonconformities, the certification level of the Facility or Operator, the type of operation in terms of the supply chain structure, frequency of operation and site access, welfare related factors such as restraint and slaughter methods used as well as the use of stunning or non-stun slaughter. It also considers past performance under LGAP, or during the transition, past performance under ESCAS.

The outcome of the risk assessment is a risk rating that determines the frequency of internal and external audits.

A similar model was required to be established to determine the frequency of internal and external audits for traceability system providers under the new standard. Based on the research and consultation with exporters and system providers undertaken in Stage 1, a number of risk factors were identified in relation to traceability systems and the various types of controls used to reduce, minimise or remove those risks were established. The controls were then scored based on their effectiveness to manage risk.

3.2.4 Engagement

The project is included in the scope of responsibilities of the LGAP Industry Consultative Committee, which is comprised of representatives from MLA, ISC, LiveCorp, ALEC and AniMark. At the request of ALEC, AniMark provided a detailed assessment as to how the draft standard aligns with the relevant ALEC resolutions and MRAG Asia Pacific recommendations.

At the commencement of the public comment period, AniMark provided a dedicated briefing on the draft standard for ALEC members. Briefings were also provided to the Department and the Inspector General of Live Animal Exports.

3.2.5 Consideration by the AniMark Board and Subcommittees

Stage 2 included the consideration of the LGAP Standards and Rules through the AniMark Standards Committee and the AniMark Rules and Integrity Committee. This process allowed for a period of public review of the Standards before final consideration of the LGAP Standards by the AniMark Board.

3.2.5.1 AniMark Standards Committee

AniMark's Standards Committee is comprised of members with relevant technical and industry expertise, including representation by impacted stakeholders (i.e. those required to implement the Standard). The Committee operates under specific terms of reference and abides by AniMark's governance process for standards development. The composition of this Committee and its terms of reference were established during W.LIV.3027 in consultation with industry and the Government. Under AniMark this Committee was reconstituted and new members recruited. The Committee's terms of reference under AniMark maintain the principles of the terms of reference created under W.LIV.3027 which focused on balanced representation of impacted stakeholders and technical experts.

The Standards Committee was provided with a draft version of the new Standard prior to their 18 February 2021 meeting. Committee members provided feedback on the Standard, and the feedback was consolidated in a register before being circulated to the whole Committee. The Committee considered the new Standard along with the feedback from all members and changes were made to the standard to reflect the Committee's deliberations.

At the 18 February 2021 meeting, the Committee also considered how the existing LGAP Standards would need to be updated to give effect to the new Standard.

Following the meeting, the changes agreed by the Committee were made to the new Standard and the existing LGAP Standards were updated to reflect Committee discussions. Updated versions of all LGAP Standards were circulated to the Committee on 9 March 2021 for their review. The Committee was asked to either endorse the updated LGAP Standards for public comment or indicate if they had material changes which would require convening a Committee meeting to resolve. The Committee agreed by circular resolution that the LGAP Standards could proceed to public comment.

3.2.5.2 Public comment process

In line with AniMark's standards governance process and upon endorsement by AniMark's Standards Committee, the LGAP Standards were released for public comment on 15 March 2021. A reminder was provided on 12 April 2021. The 60-day public comment period closed on 14 May 2021.

Two parties requested extensions which were granted and comments were included in that considered by the Committee.

One week prior to the 1 June 2021 meeting, the Committee was provided with a consolidated register of the comments received. In total, 189 public comments were received and considered by the Committee.

The Committee's terms of reference prescribe AniMark's standards governance process which was followed by the Committee when considering public comments received. The approach taken follows that utilised by the International Organization for Standardization (ISO) when assessing public comments and involves the Committee discussing each item of feedback received and then making a consensus determination (where possible) on each item based on the following:

- **Accepted** – the change has been accepted as suggested.
- **Partially accepted** – the intent of the change or comment has been accepted but alterations made to the suggested phrasing, placement or other aspects have been made.
- **No change required** – the comment did not warrant a change.
- **Noted** – no suggested change was proposed or a need for a change could be ascertained from the commentary provided.

The Committee considered the public comments received and based on their determinations, the changes agreed were made to the LGAP Standards and updated versions circulated to the Committee on 14 June 2021 for their review. The Committee endorsed the LGAP Standards and recommended them to the AniMark Board for approval.

3.2.5.3 AniMark Rules and Integrity Committee

AniMark's Rules and Integrity Committee has responsibility for the review and recommendation of the LGAP Rules to the AniMark Board. The Committee operates under specific terms of reference.

The final draft LGAP Rules were provided to the AniMark Rules and Integrity Committee for review. Final acceptance of the updated LGAP Rules is dependent on the Exporter Supply Chain Assurance Operations (ESCAO) Approved Arrangement process AniMark is undergoing with the Department, the timeframe for which is outside the scope of this Project. Any amendments required to the LGAP Rules as a result of the ESCAO Approved Arrangement process will be managed by AniMark.

3.2.5.4 AniMark Board

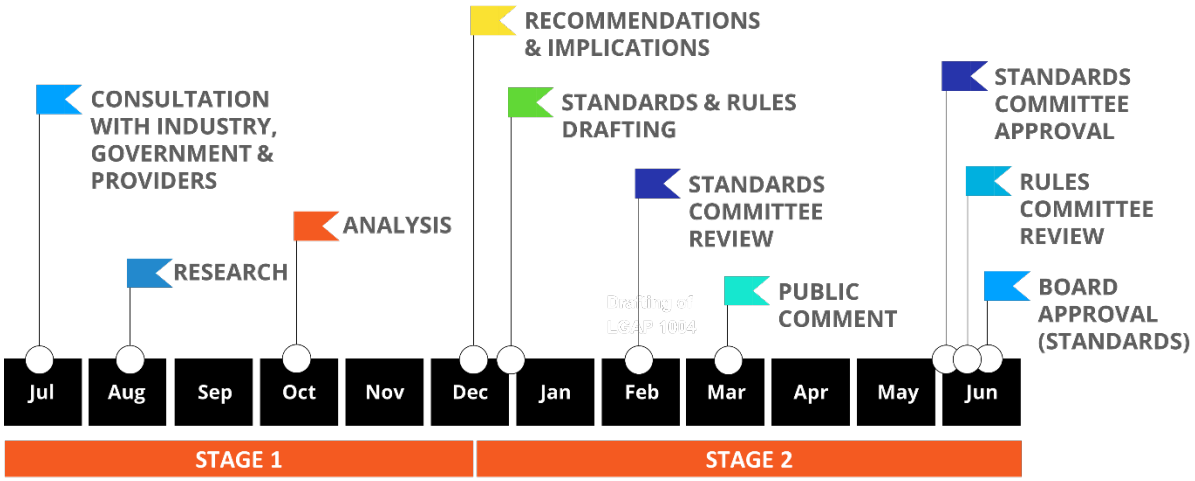
The final LGAP Standards (1000, 1001, 1002, 1003 and 1004) were provided to the AniMark Board for review. The Board adopted the new Standard and the updated LGAP Standards at their June 2021 meeting.

Final acceptance of the LGAP Rules is dependent on the Exporter Supply Chain Assurance Operations (ESCAO) approved arrangement process AniMark is undergoing with the Department, the timeframe for which is outside the scope of this Project. Any amendments required to the LGAP Rules as a result of the approved arrangements process will be managed by AniMark.

3.3 Final project delivery

The project timeline was ambitious and scheduled to occur over a 16-month period. Fig. 1 shows the project timeline and the schedule of key project components. The project was successfully delivered in advance of the scheduled timeframe (<12 months) and to budget, with all objectives and reporting milestones met.

Figure 1: Project timeframe and key components



4. Findings and outcomes

4.1 Stage 1 – Research and analysis

The C&T aspects of ESCAS are designed to ensure livestock remain within an approved supply chain so that handling and slaughter are in accordance with internationally accepted animal welfare guidelines. Based on information available from the Department, the two aspects of C&T are:

- **Control**
  Exporters must have control of all supply chain arrangements from the point of unloading from the vessel to the point of slaughter, including livestock transport and management. Control means that all livestock remain within the approved supply chain.

  Exporters can demonstrate control through either vertical integration, where a parent company has control because it owns all components of the supply chain, or contractual arrangements with parties that are not vertically integrated.

- **Traceability**
  Exporters must be able to trace or account for livestock through the supply chain in order to demonstrate that all livestock only went to facilities that have been independently audited, found to be compliant and included in the approved supply chain.

  All cattle and buffalo in an export consignment must be individually identified and traceable from the Australian registered premises through to the overseas abattoir. Exporters must be able to locate livestock at any point in the supply chain.

  For sheep and goats, a process of counting and reconciling livestock numbers at different points in the supply chain and retaining data for each point to allow auditing and reconciliation by an independent auditor must be in place.

C&T under ESCAS is based on a supply chain model which considers consignments and relies on declarations of compliance by exporters that certain C&T requirements are being met.

No overall standard or detailed requirements for C&T exist under ESCAS; however, a standard for Vietnam was released in 2015. Notwithstanding this, there are a number of C&T stipulations across various Exporter Advisory Notices (EANs) and in guidance materials.

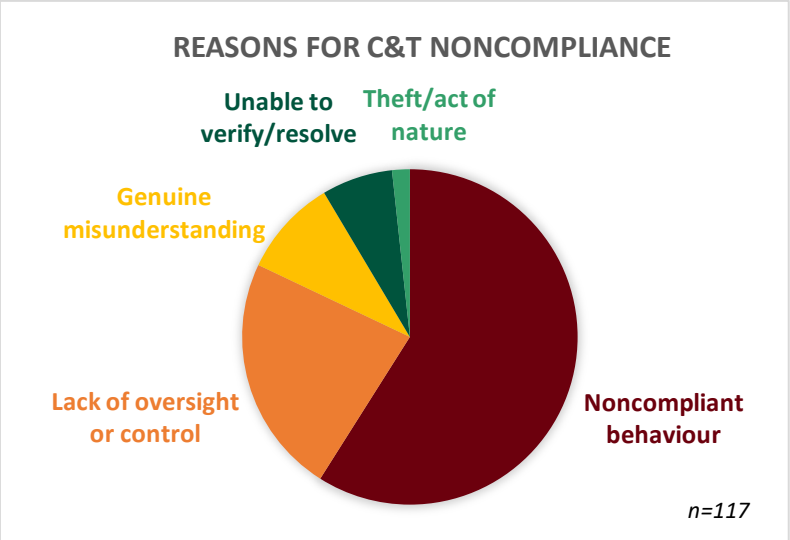
The Department requires that the declarations made under ESCAS be supported by evidence of the ongoing conduct of these arrangements throughout the supply chain. The exporter, as the regulated party, is responsible for C&T and must be able to demonstrate that they meet ESCAS requirements at all times.

An analysis of ESCAS Performance Reports 2015-2019 indicates that C&T noncompliance represents the majority of reported ESCAS noncompliances (80%). Cattle had higher occurrences of noncompliance than sheep.

Vietnam and Kuwait followed by Malaysia, Oman, Thailand and the UAE, were the six markets with the greatest number of C&T related noncompliance. Indonesia, Jordan and Japan experienced fewer noncompliances related to C&T compared with the other markets.

The ESCAS Performance Reports indicate the reason found by the Department for the noncompliance was predominately due to in-market noncompliant behaviour (59%) evident either through the falsification of information (15%) or a disregard for compliance (44%) (Fig. 2). In other instances, the noncompliance was due to a lack of oversight of data and information or a lack of control by the exporter over their supply chain which contributed to leakage.

Figure 2: Reasons for C&T noncompliance (2015-2019)



Milestone Report 1

While noncompliances were raised in the above cases, there were only a small number (7%) of instances where investigations were not able to determine the source or reason for the leakage. In some cases, this lack of accountability resulted in noncompliances assigned by the Department to all exporters operating in that market.

Exporters considered ESCAS C&T requirements to be unclear, impractical, overly onerous and not proportional to those most able to influence C&T in-market. The actions taken by the Department in response to reports of noncompliance were considered by exporters to be disproportionate when considered in light of the small number of livestock involved in C&T issues as a subset of the total numbers exported.

The research found the ESCAS C&T requirements to be ambiguous resulting in significant variability in how these requirements are interpreted and managed by individual exporters. This contributes to the inconsistent management of ESCAS C&T in-market, difficulty in improving practices and elevated risk to the industry as a whole.

Control and traceability were often found to be linked in requirements but in practice, managed through separate mechanisms.

Exporters and their supply chain partners have, in general, invested substantially in approaches to achieve C&T compliance. Some exporters and importers have developed their own proprietary databases and technology systems while others utilise the services of third-party providers.

Traceability for the livestock export industry is multifaceted and relies on a balanced combination of on-ground resourcing to verify events, an effective management system and readily and rapidly accessible data. Where any one of these factors is diminished, so too is the reliability of the process, thereby increasing the risk of noncompliance.

The consultation, research and analysis identified 37 challenges associated with maintaining C&T of Australian livestock in overseas markets.

These challenges can be categorised as relating to:

1) Commerciality and legality
2) Variability
3) Responsibility
4) Reliability
5) Veracity
6) Technology

The dominant themes related to the allocation of responsibility for C&T and variability within approaches and results.

The existing LGAP Standards and Rules remain consistent with those delivered under the LEP project W.LIV.3027 in 2016, accepted by industry through the LGAP Implementation Steering Committee (LISC) process in 2017 and adopted by industry by way of industry establishment of AniMark Ltd in 2018. Minor updates were made by the AniMark Standards Committee to the LGAP Standards to accommodate changes to ESCAS in the period between the completion of W.LIV.3027 (2016) and the establishment and operationalisation of AniMark Ltd (2019) and these were made available for public comment during 2020.

Minor amendments were made to the LGAP Rules by the AniMark Rules and Integrity Committee in 2019, principally due to the change between the conformance IT system developed under W.LIV.3027 and the system established by AniMark as a result of the original system becoming unavailable.

An assessment of the existing LGAP Certification Requirements demonstrated that the fundamentals of C&T are embedded in the original LGAP design in a manner that is equivalent to the regulatory requirements, consistent with ISO and WTO expectations, adheres to the principles of traceability and ensures all parties who contribute to C&T are accountable. This was acknowledged by MRAG Asia Pacific in their assessment of LGAP (2018) and is ratified by the Department's Export Advisory Notice 2020/25 that states that audits against the LGAP Standards will meet all requirements of an ESCAS independent audit.

LGAP provides clear expectations for C&T and distributes responsibility throughout the supply chain. As such, LGAP in its current form has the potential to alleviate many of the challenges identified in Stage 1.

The remainder of the identified challenges can be addressed by broadening the scope of LGAP and introducing a standardised approach to the systems used to demonstrate ESCAS C&T compliance.

This would require the development of an additional standard as well as modifications to the existing LGAP Standards and Rules.

Such an approach would define the requirements for traceability systems and rules to govern how such systems were assessed and used.

This would also define the obligations of system providers seeking to have their systems approved by AniMark for use by Operators or Facilities certified under LGAP.

This approach would address the identified challenges associated with maintaining C&T of Australian livestock in overseas markets by:

1. specifying data formats to assist security and compatibility;
2. improving data accessibility and security, for example timeliness, storage and transfer;
3. specifying data retention obligations;
4. providing visual recording (picture) guidelines;
5. including third-party providers in the assurance framework and clarifying responsibilities of Operators, Facilities and Traceability System Providers;
6. strengthening data verification expectations;
7. enhancing required competencies for personnel in relation to C&T;
8. clarifying the difference between control, traceability and surveillance;
9. specifying traceability response times; and
10. introducing trigger events for traceability reviews.

This approach would augment the LGAP Standards and Rules and create a standardised, objective means for exporters to meet ESCAS C&T obligations through the inclusion of systems and system providers under LGAP.

By conforming with the LGAP Standards in their own right and using a system that conforms with a traceability system standard, whether it is their own system or a third-party system, an Operator or Facility can be confident they are fulfilling their obligations under LGAP and therefore ESCAS.

The LGAP Standards were designed to be adaptable to allow additional standards to be introduced as required. As such, a standard for traceability systems fits under the existing structure of LGAP with some amendments to the existing LGAP Standards required to recognise and give effect to the new standard.

The LGAP Certification Rules currently have the structural arrangements in place to enable this approach. Some modifications would be required to include the new standard and system providers as parties to LGAP as well as the process for approving these providers and certifying the systems.

While no standard or approach will eliminate deliberate noncompliant or fraudulent behaviour, LGAP and the proposed traceability system standard would aid the detection of and should deter such behaviour.

The introduction of LGAP and a new traceability system standard would clarify obligations, introduce consistency in approaches and encourage conformity. Genuine conformity with LGAP, including the new traceability system standard, would help minimise industry risks associated with ESCAS C&T noncompliance.

4.1.1 Consideration of the MRAG Asia Pacific recommendations and ALEC resolutions

The two recommendations of the MRAG Asia Pacific investigation relevant to LGAP were considered during Stage 1. The MRAG Asia Pacific recommendations were fundamentally based on a number of symptoms observed in relation to leakage in Vietnam. The recommendations were specific to Vietnam, did not include root cause analysis and, given the Vietnam focus, were unable to be immediately applied within a global standard. In addition, it was not within the MRAG Asia Pacific project scope to consider how LGAP was currently structured and whether the current arrangements would alleviate the problems identified.

In order to address ALEC's resolutions, the consultation, research and analysis which occurred during Stage 1 allowed an opportunity to more deeply analyse the cause of the issues which led to the recommendations made by MRAG Asia Pacific. This provided greater clarity around what needed to be incorporated in a globally applicable standard in order to address the underlying causes of C&T noncompliance. As a result, the approach taken to address the ALEC resolutions was not to directly take the MRAG Asia Pacific recommendations at face value but rather develop a combination of requirements that deliver the outcomes the ALEC resolutions were seeking.

In addition, this analysis identified that one of the MRAG Asia Pacific recommendations for LGAP and therefore one of ALEC's resolutions (Resolution 4) was already fulfilled and therefore did not need further consideration in the development of the new standard for LGAP.

Resolution 4 from ALEC related to MRAG Asia Pacific's recommended that ALEC explore the existing framework for auditing with a view to ensuring clear requirements existed for:

a) auditors to be independent of the audited facility;

b) auditors and auditing companies to have demonstrated C&T expertise; and

c) rigorous practical evaluation of the effectiveness of C&T systems during audits including the collection of objective evidence to test whether control and traceability were maintained. This should include testing the veracity of key supply chain records (e.g. records of movements between facilities; comparison of export library photos against slaughter photos).

When considering how LGAP currently fulfilled this recommendation, the following was identified:

- The current LGAP Rules are structured such that AniMark approves certification bodies (Approved Certification Bodies) who meet certain minimum criteria, such as the need to fulfil the requirements of ISO/IEC 17065, which include significant provisions for ensuring impartiality. AniMark also approves all auditors (Approved Auditors) who work under the control of an Approved Certification Body.

- The LGAP Rules prescribe that Approved Auditors must meet certain minimum requirements including having a Lead Auditor qualification, completing the LGAP training modules and maintaining prescribed levels of continuing professional development and having knowledge

of audit practices as specified in ISO 19011 (which details the approach for undertaking objective assessment and gathering objective evidence).

- The LGAP Rules also require that there be no conflict of interest and that Approved Certification Bodies and Approved Auditors be independent of certified parties. In selecting Approved Certification Bodies and Approved Auditors, AniMark would ensure the respective parties can demonstrate they fulfil these requirements before they are approved.

- In addition, the existing LGAP Rules specify the competencies required of Approved Auditors based on the components they are auditing. As such the requirement for Approved Auditors to have knowledge in "systems and agreements to enable traceability of livestock throughout the supply chain" are already written into the LGAP Certification Rules.

- Once Approved Certification Bodies and Approved Auditors are approved, AniMark allocates an Approved Certification Body to an Operator or Facility. The Approved Certification Body then assigns one of their Approved Auditors to that Operator Facility to conduct audits and manage nonconformities. This process further ensures the independence of both Approved Certification Bodies and Approved Auditors.

- LGAP 1002 includes a number of requirements for record keeping to support C&T. Given the expected competencies of auditors approved under LGAP, they would be expected to undertake a rigorous evaluation of those requirements at each audit.

- Auditors would be expected to assess if Operators and Facilities meet the requirements of LGAP regardless of which system was used. It is expected (and normal in conformity assessment programs) that in demonstrating conformity with LGAP, the auditor would need to audit the Operator and Facility's use of their traceability system at each external audit and verify that by using that system, the specific Operator or Facility has met the requirements. The guidance provided to auditors under LGAP currently includes undertaking traceability tests including trace forwards and backwards exercises during individual Operator and Facility audits.

- In addition, there is already a component of supply chain auditing within LGAP that requires the traceability testing of livestock through a supply chain.

As a result, LGAP in its current form does not require any amendment to fulfil the ALEC Resolution 4.

The remaining ALEC resolution (Resolution 1) was considered during the drafting process (refer to section 4.3.1.4).

4.2 Stage 2 – Formulating recommendations

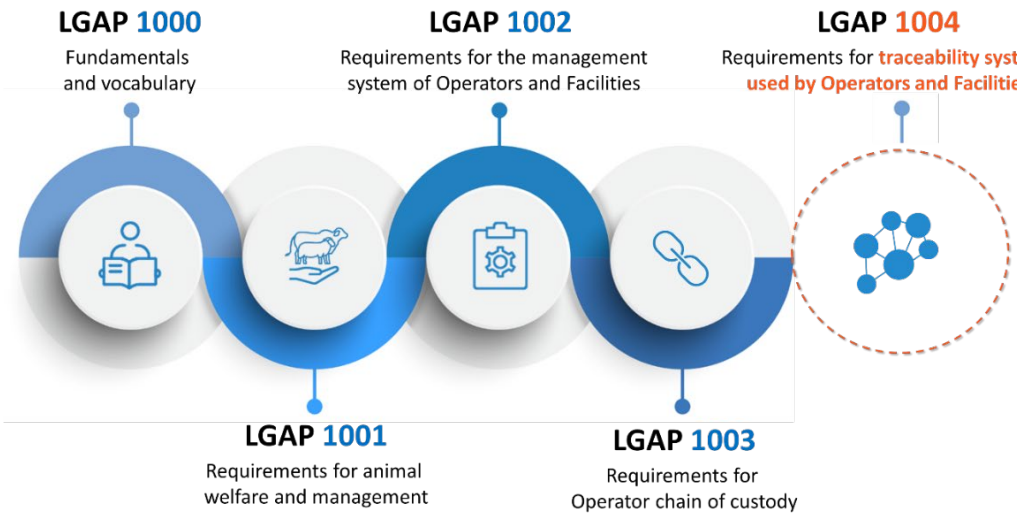
The findings of Stage 1 were considered, and four recommendations were made:

R1	Introduce a standardised approach to the use of C&T systems under LGAP. It was recommended this be achieved through the development of an additional standard for C&T systems along with modifications to the existing LGAP Certification Requirements to recognise and give effect to the new standard.
R2	Develop the new standard for C&T systems as LGAP 1004 and this include outcomes-based requirements for both the C&T systems and the providers of such systems (who may be internal or external providers).
R3	Modify the existing LGAP Standards to recognise the standardised approach to the use of C&T systems under LGAP and give effect to the new standard.
R4	Modify the existing LGAP Certification Rules to recognise the standardised approach to the use of C&T systems under LGAP and give effect to the new standard.

Of particular note, Stage 2 did not recommend the development of a specific system but rather recommended the introduction of standardised requirements for traceability systems used by Operators or Facilities under LGAP.

The LGAP Standards were designed to be flexible and adaptable to allow additional standards to be introduced as required. As such, it was determined that a standard for traceability systems would fit under the existing structure of LGAP. This would result in the introduction of LGAP 1004 *Livestock assurance – Requirements for traceability systems used by Operators and Facilities*, as shown in Fig.3.

Figure 3: The proposed addition of LGAP 1004 to the LGAP Standards



In doing this, it was acknowledged changes to the existing LGAP Standards and Rules would be required to give effect to the new Standard and achieve the outcomes necessary to ensure traceability under LGAP.

4.2.1 Implications

A number of implications for the recommendations were identified.

4.2.1.1 The relationship between the new standard and the existing LGAP Standards

A separate new Standard was required to be developed and modifications made to the existing LGAP Standards and Rules. Requirements in either the new Standard or the modified LGAP Standards and Rules would relate to:

- The system provider - to ensure their systems are constructed and implemented appropriately (i.e. the system is validated against design standards) and continue to operate in the intended manner (i.e. the system is verified against integrity standards).

- The Operators and Facilities (and provider where they are a user as well) – to ensure their use of approved systems achieves the appropriate outcome (i.e. use is verified against usage standards).

Two aspects were required to be considered in developing the new Standard and modifying the existing LGAP Standards and Rules:

- **Traceability System Providers**

  Providers of traceability systems would apply to AniMark for assessment and approval of their system. AniMark would assign an appropriately qualified Approved Certification Body to the system provider and one of their Approved Auditors would assess the system against the standard.

  Systems that are assessed as conforming with the new standard would be validated as having the fundamental aspects to support traceability under LGAP and become certified systems. Certified systems would be subject to ongoing verification activities based on an assessment of risk, not dissimilar to that already provided for under LGAP for Operators and Facilities.

  Traceability System Providers may be an external third-party or may be Operators and Facilities themselves. A distinction between certification of Operators and Facilities compared with Traceability System Providers needed to be that the provider itself is not certified, but rather their system is. This would allow Traceability System Providers to provide a number of different systems with different certification scopes (e.g. systems for sheep vs systems for cattle).

- **Operators and Facilities**

  Operators and Facilities who use certified traceability systems would have their use of the system verified during their usual external audit by their Approved Auditor who would consider if the system is:

  1. being used by the Operator or Facility in a manner consistent with any usage requirements; and
  2. performing against the system standard.

The use of certified traceability systems in a manner inconsistent with usage requirements would be considered a critical nonconformity.

In addition, enhanced requirements would be introduced in the existing LGAP Standards in relation to the Operator and Facilities' responsibilities for verifying the integrity of the data relied upon by the system.

A nonconformity identified against traceability system requirements either during an Operator or Facility's audit or during a Traceability System Provider's audit, may be attributed to the Traceability System Providers or the Operator or Facility, or all parties.

In this way, Operators and Facilities are not able to abrogate responsibility for their obligations under LGAP and therefore ESCAS to a Traceability System Providers but rather must continue to ensure they meet their requirements and take responsibility for ensuring the systems and tools are appropriate and used appropriately.

4.2.1.2 The content and structure of the new Standard

The Standard for certifying traceability systems for use by Operators and Facilities would need to:

- clearly define:
    - the scope of the standard; and
    - the primary purpose of the system, including goals and objectives;
- be outcomes based to:
    - allow for innovation in how conformity is achieved and demonstrated;
    - fit different geographies and supply chain management practices;
    - recognise legal requirements in foreign jurisdictions; and
    - accommodate different traceability methods for use, including methods that may emerge over time (i.e. individual identification vs group based, use of UHF or low-frequency RFID, GPS, blockchain etc.).
- ensure the system:
    - supports data that is reliable, relevant and readily and rapidly accessible;
    - can utilise a one-step forward and one-step backwards approach at a Facility level (e.g. internal traceability) and a whole-of-chain approach at an Operator level (e.g. external traceability);
    - enables data capture of:
        - master level data (i.e. data which links transaction and critical tracking events and gives context);
        - transaction events (i.e. change of ownership or custody between traceability parties); and
        - critical tracking events (i.e. movements of the traceable object between traceability locations);
- address the five dimensions of traceability:

  - who: the system identifies the traceability parties involved in a transaction or critical movement event;
  - what: the system identifies the traceable object (or objects);
  - where: the system records traceability locations where the transaction or movement events take place (e.g. uniquely identified locations);
  - when: the system records when each movement or event that included the object being traced occurred; and
  - why: the system records what happened, e.g. the business process or transaction which took place with the object's movement; and
- support positive evidence of conformity from all Facilities and Operators (or system providers where they are a user) rather than the absence of evidence or evidence from only one of these parties.

The specific areas a traceability system standard needed to address are provided in Table 2. These were based on the challenges identified and aspects expected within traceability systems outlined during Stage 1.

Table 2: Areas a standard for traceability systems under LGAP should address

Technology	Business rules	Processes	Validation

• Data collection
• Data storage
  ○ Security
  ○ Access
• Data sharing, storage and exchange
  ○ Data compatibility/format
  ○ Data transfer – method and timeframe
  ○ Data availability and quality
  ○ Data retrieval – minimum retention period
	• Traceability parties
	• Traceability locations
	• Identification requirements
	• Internal traceability
	• External traceability
	• Data recording requirements
	• Precision of traceability data (level of identification and granularity)
	• Key performance indicators and service levels
	  ○ Targets
	• Monitoring
	  ○ Traceability tests
	  ○ Alerting of anomalies
	  ○ Alerting of nonconformities
	  ○ Interventions
	• Mitigation of fraud
	• Reporting
	• Review and testing
	• Usage requirements
	• Ownership and cooperation
		• Key element data for collection:
		  ○ Master level data
		  ○ Transaction data
		  ○ Critical tracking event data
		• Data transfer and storage
		• Trace forward and trace backwards
		• Roles and responsibilities
		• Resources
		  ○ Human resources and competency
		  ○ Infrastructure and equipment
			• Validation of data with real life activities
			• Data quality
			  ○ Complete
			  ○ Accurate
			  ○ Consistent
			  ○ Valid
			• Tamper evidence
			• Supporting evidence and reconciliation
			• Additional verification methods

The following needed to be considered when forming requirements based on the areas identified in Table 2:

- Requirements relating to the personnel provided by system providers and their competency in relation to traceability activities including counting livestock and methods of segregation.
- Levels of attainment or scoring of requirements for system providers. This may be achieved by developing scaled requirements, for example a minimum acceptable standard, scaling up to a higher standard.
- Requirements that data be readily and rapidly available. Consideration should be given to defining timeframes for transfer, storage and data retention.
- Requirements for data formats, transfer and storage with a view to improving security and compatibility and reducing the risk of tampering.
- Requirements relating to visual recording guidelines such as image capture, resolution and quality as well as the competency of people responsible for image capture.
- Performance targets for systems and events which may trigger certain activities such as reporting, investigations and surveillance etc.
- Defining segregating and ensuring segregation is verified in the system.

4.2.1.3 Changes required to the existing LGAP Standards

A series of changes to the existing LGAP Standards were identified as being necessary to give effect to the new Standard.

The following areas were identified in LGAP 1000 as requiring modification:

- Modifications to the preamble and scope to introduce LGAP 1004 and Traceability System Providers.
- The introduction of terms used in relation to traceability, for example system, system provider, traceability events, traceability locations, traceability parties, data capture, data storage, data retention, data collection, etc.
- Clarifying the difference between control, traceability and surveillance.
- Modifications to the existing management system and traceability and control principles to include Traceability System Providers.

The following areas were identified in LGAP 1001 as requiring modification:

- Modifications to requirements for the segregation of livestock for Operators and Facilities.
- The process for capturing images of slaughtered livestock or scanning identification in a manner that does not adversely impact animal welfare processes.

- Introduction of requirements for Operators or Facilities to implement any procedures their Traceability System Provider sets.

The following areas were identified in LGAP 1002 as requiring modification:

- Introduction of Traceability System Providers as a party to LGAP 1002 and including requirements for Traceability System Providers in relation to internal quality assurance (QA) procedures, internal auditing, business rules, processes, procedures, risk management and disclosure. This should include the use of trace forwards and backwards exercises as well as data verification procedures.

- Amendments to address appropriate use of approved systems and ensure system users adhere to any relevant usage requirements or procedures specified by the Traceability System Provider.

- Modifications to internal QA processes, internal auditing, processes, procedures and risk management to accommodate the traceability obligations of Operators and Facilities. This should include the use of trace forwards and backwards exercises as well as data verification procedures.

- Introduction of business rules and disclosure requirements for Operators and Facilities.

- Requirements for additional competencies for people with traceability obligations such as counting livestock and methods of segregation.

- Requirements that data be readily and rapidly available. Consideration was required to be given to defining timeframes for data collection, transfer to trading partners, storage and data retention.

- Requirements relating to visual recording guidelines including image capture, resolution and quality as well as the competency of people responsible for image capture.

- Performance targets for systems and events which may trigger certain activities such as reporting, investigations, surveillance etc.

- Defining segregating and ensuring segregation processes are developed by Operators, Facilities and Traceability System Providers.

The following areas were identified in LGAP 1003 as requiring modification:

- The inclusion of a new requirement in relation to verifying the ongoing use of the certified system.

4.2.1.4 Changes required to the existing LGAP Certification Rules

A series of changes to the existing LGAP Certification Rules were identified to recognise the new standard and Traceability System Providers as parties to LGAP. For the most part, these changes were made to clauses that were already incorporated in the LGAP Rules and related to:

- **Key parties and responsibilities**
    - Parties to the program and their roles, responsibilities and obligations, including:

- AniMark as the owner of LGAP;
- Traceability System Providers (either internal or external systems) who can apply to have their system considered for certification under LGAP;
- Operators and Facilities certified under LGAP and their responsibilities in relation to the use of traceability systems; and
- auditors authorised to undertake evaluation and assessment activities to validate the system and verify its use and the methods AniMark will utilise to authorise and monitor such parties.

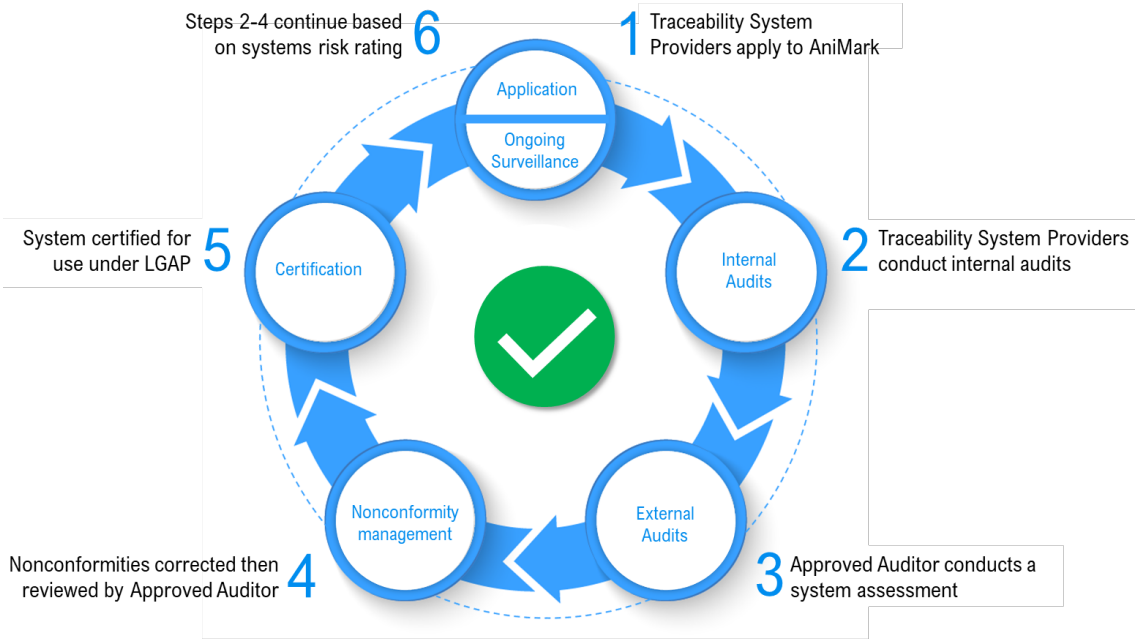
○ Key relationships between all parties, including expectations regarding impartiality, competence, operational consistency, contractual matters, service levels and performance measures.

○ Requirements associated with changes in the nature, ownership, key personnel or operations of organisations that could impact their ability to demonstrate ongoing conformity, including mandatory reporting of any sanctions, convictions or other legal penalties incurred or requests to transfer existing recognitions to other parties.

- **Certification process overview**

○ The LGAP Certification Rules currently have structural arrangements in place to enable the approval of traceability systems for use under LGAP in a manner similar to that used to certify Operators and Facilities, as shown in the LGAP Certification Pathway in Fig. 4, modified to demonstrate how this process would fit with Traceability System Providers.

Figure 4: The LGAP Certification Pathway and application to traceability systems



Adapted from AniMark LGAP training materials

- **Evaluation and assessment activities**
    - Any risk-based approach to evaluation and assessment activities that are adopted, including:
        - scoring or aggregation methods to provide an indicator of overall conformity and subsequent recognition at different levels of conformity (e.g. scoring or star-rating systems etc.);
        - consideration of past compliance performance or existing risk-ratings; and
        - the use of parameters that, if exceeded, flag follow-up investigation and compliance activity as necessary, either internally, at the next scheduled external conformity check or as an extraordinary intervention.
    - Consideration of the existing risk rating framework for determining surveillance frequency (Fig. 5) and its application under the new Standard to Traceability System Providers.

Figure 5: LGAP risk ratings and surveillance frequency

	Low risk	Medium risk	High risk
Internal audit	4 Monthly	3 Monthly	Monthly
External audit	Annual	6 Monthly	3 Monthly

LGAP In Practice (AniMark 2020)

    - Pre-application activities, including specification of any eligibility criteria, prerequisites or prior conformity assessment activities, such as completed self-assessments or other certifications.
    - Type and frequency of evaluation and assessment activities, including provision for:
        - granting access to parties responsible for assessing and evaluating systems to systems, sites, personnel, equipment, software and documented information etc. to undertake a thorough and appropriate evaluation and assessment of the system;
        - parameters to be adhered to during evaluation and assessment activities such as the methods to be used, mix and focus of the methods (e.g. document and records based, management system audits, observation and inspection of activities and, sites, facilities and resources, an inspection of physical aspects, sampling and testing, scenario testing (e.g. trace forwards and backwards exercises) and review of nonconformity incidents, etc.);
        - acceptance of prior conformity assessment results, alternative or ‘deemed to comply’ solutions, agreed procedures or approved arrangements that the

organisation uses to monitor and demonstrate conformity that can replace or reduce the need for 'normal' determination activities to take place; and

- internal controls of system providers, including their own internal QA, ongoing monitoring of their conformity, complaints handling and internal investigations of reported failures or concerns.

- Process for ongoing demonstration of conformity including any surveillance activities and their frequency, such as:
  - in-market sampling, testing or inspection;
  - random or scheduled audits or spot checks;
  - reliance on self-declarations and submission of internal compliance control and quality assurance outcomes (e.g. internal inspection, internal audits and corrective action reports, management reviews, etc.);
  - variations in frequency period (e.g. 18-month cycles) to take into account seasonality of operations and different conditions during the year;
  - process for reapproval (i.e. time/cycles);
  - events that may trigger certain activities such as reporting, investigations, surveillance etc.

- **Nonconformity management and sanctions**
  - Nonconformity management, including nonconformity categorisation and timeframes for completion of corrective action.
  - Process for escalating nonconformities, suspension and withdrawal of approval and/or the application of other types of sanctions based on the severity of risk and proportionality.

- **Review and decision making**
  - The extent to which open nonconformities are considered in decision making and the permissible degree of flexibility around making conditional decisions.
  - Considerations for establishing risk ratings of recognised organisations to determine recognition duration and time intervals until the next conformity assessment activity (refer to section 4.3.3.1).

- **Appeals**
  - Process for appeals, taking into account the principles of natural justice, procedural fairness and specifying the roles and responsibilities of the various parties that can be involved.

- **Reporting**
    - Conformity assessment reporting including the use of the AniMark IT Conformance System.
    - Requirements associated with information management and confidentiality including determining the level of transparency of approval status expected by interested parties including that approved, suspended and withdrawn status will be communicated in a public directory.
    - Use of relevant information to benchmark organisations, provide assurance and promote conforming organisations and products.
    - The use of any marks of conformity or label claims used to signify approval for use under LGAP.
    - Processes for outcome measurement, monitoring and reporting.

4.3 Stage 2 – Implementing recommendations

4.3.1 Developing a new LGAP Standard

Following the submission of the Milestone 2 Report to AniMark, the development of *LGAP 1004: Livestock assurance - Requirements for traceability systems used by Operators and Facilities* progressed.

The development of a traceability standard under LGAP was challenging due to the complexity of industry approaches and the regulatory framework. Such complexities arise due to the existence of:

- different providers;
- different approaches;
- different services;
- different applications;
- different users;
- different species;
- different geographies; and
- different operations.

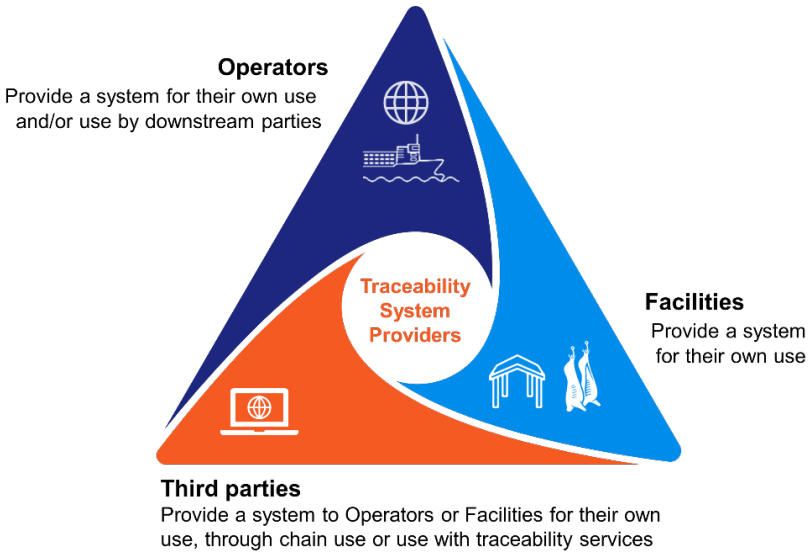
Not only did the new Standard need to overcome the challenges identified under Stage 1 and implications identified when formulating the recommendations in Stage 2, but consideration also needed to be given to the complexities above, the structure of the document itself and context, and the MRAG Asia Pacific recommendations and ALEC resolutions.

4.3.1.1 Complex considerations

The specific complexities which needed to be considered in the development process included:

- Systems may have been developed or are provided by Operators, Facilities or external third parties. All are considered Traceability System Providers (Fig. 6).

Figure 6: Different ways systems can be provided under LGAP



- Systems may address internal traceability only (e.g. manage traceability just at the Facility level) or they may address external traceability (e.g. manage traceability through the supply chain at an Operator level). In addition, importers are typically the "gate keepers" for traceability information.

- The human resources required to use the system, as well as necessary infrastructure or equipment required to ensure the optimal operation of the system can be provided either internally by the Facilities or Operators as traceability activities or externally by third parties as 'traceability services', as shown in Fig. 7.

Figure 7: The differences between traceability activities and traceability services

- There are **system providers** and **system users**, but a provider can also be a user. Operators or Facilities may be a provider or a user, or both.

- Fulfilment of requirements for the traceability system and how it is constructed, implemented and operated rests with the system provider and as such, nonconformities occur against the Traceability System Provider if the system fails to operate as required.

- Fulfilment of requirements for the usage of the system and obligations for verifying the integrity of the data relied upon by the system rests with the users of the system and as such, nonconformities occur against a user if the usage of the system is not consistent with requirements.

- In order to foster innovation, good practice in standards development recommends outcomes-based requirements rather than specifying a particular way to meet the requirement or a specific system to use.

- There are varying degrees of sophistication between systems; some are highly automated, and some are manual. Requirements should not mandate a level of sophistication that is not realistically attainable by all parties.

- There are different approaches for traceability depending on the market, supply chain, species and operational structure, size and sophistication. One system does not and cannot fit all and therefore requirements need to accommodate a variety of effective approaches.

- Traceability for livestock is multifaceted and relies on a balanced combination of on-ground resourcing to verify events, an effective management system and readily and rapidly accessible data.

- Tolerances are not supported by the Department and may be perceived as an acceptable allowance for “leakage”; however, some mechanism must be used to measure the effectiveness of the system and its operation and trigger further investigation and reporting.

- LGAP is “node-based” where each individual is responsible for demonstrating their own conformity. Most traceability systems have not been designed for Facilities in particular to be able to access traceability information for their own site. Facilities and Operators need to be able to directly access and use the information from different systems in order to demonstrate they can meet the requirements under LGAP.

- Some Operators or Facilities may use multiple systems. A system should not prevent an Operator or Facility from connecting information from different systems together as this would infringe on their ability to demonstrate their individual conformity with LGAP.

- LGAP requires a verifiable demonstration of conformity. Approved Certification Bodies and their Approved Auditors would require access to traceability systems in order to conduct traceability tests. Not all system providers may be comfortable providing such access.

- No approach will prevent all “leakage”. Monitoring for and deterring nonconforming behaviour, as well as responding to conformity when it occurs, is the focus.

- Words have different meanings for different people and can be interpreted or translated differently depending on context and perspective. Terms should be clearly defined to avoid misinterpretation and ambiguity.

- The MRAG Asia Pacific recommendations, while accepted by ALEC did not necessarily present the optimal solution to alleviate the cause of the problem identified nor were aligned to outcomes-based requirements.

4.3.1.2 Alignment to the basis for LGAP

The new standard also needed to adhere to the industry-agreed vision for LGAP being that: *LGAP aims to foster world's best practice, encourage continual improvement and provide assurances that standards are in place and are being applied.*[2]

In addition, the new Standard needed to be designed following the same principles as the original LGAP Standards, meaning the Standard must:

- be applicable to any organisation:
    - anywhere in the world;
    - managing any species of livestock;
    - regardless of the size or sophistication of their operation (or their system);
- be outcomes based;
- encourage innovation and trade; and
- be consistent with expectations from ISO, WTO and ESCAS.

4.3.1.3 Structure and context

LGAP 1004 was drafted to address the topics of:

- the purpose and operation of the system;
- resources required to effectively operate the system including:
    - human resources; and
    - infrastructure and equipment;
- identification of traceability locations, parties and animals;
- movement recording;
- the use of appropriate registers; and
- verification, monitoring and reporting.

A series of annexes were also drafted to address:

- competencies of personnel;
- key data elements which are required to be captured for various events; and
- the methodology for conducting traceability tests.

Subsets of requirements were written for:

- Traceability System Providers;
- Traceability System Providers that also offered traceability services;
- Traceability System Providers with supply chain systems; and
- Traceability System Providers with supply chain systems that also offered traceability services.

[2] Schuster A (2016). *W.LIV.3027 - Development of a Global Assurance Program for the Livestock Export Industry*. Meat & Livestock Australia Limited

This is consistent with the approach taken with the other LGAP Standards which specify requirements for all Operators and Facilities and then subsets of requirements for different types of Operators and Facilities.

Specific definitions were drafted to ensure a common understanding among all parties, avoid forcing parties towards a specific approach and enabling consistent interpretation and application.

4.3.1.4 Alignment to MRAG Asia Pacific recommendation 1 and ALEC Resolution 1

The manner in which the remaining MRAG Asia Pacific recommendation and subsequent ALEC resolution (Resolution 1) was considered also proved challenging as it was not able to be taken on face value and applied to a standard that needs to operate in an international context and adhere to good practices in standards development. MRAG Asia Pacific's recommendation related to developing prescriptive standards to address the following issues:

a) Image quality – all imagery used as verification should be able to positively identify individual animals. Standards are required for image resolution, framing and timing of capture;

b) Automation – systems which allow for manual editing of images and manual entries of event data are generally at higher risk of undetected leakage. All images and event records should be uploaded to data storage facilities through robust, direct and automated processes that are digitally verified in real time;

c) Real-time – monitoring of all events should occur in real-time with capacity to address potential non-conformances immediately;

d) Minimum periods for data storage - CCTV footage should be stored for a sufficient period of time to allow for audit processes for each shipment to be completed;

e) GPS cross-referencing - this should be facilitated through an automated, tamper-proof process applying GPS coordinates to all images, which can be cross referenced against the location details of approved facilities;

f) Tolerance rates for mortalities, emergency slaughters and tag replacements - standards (or levels of tolerance) should be developed around 'acceptable' levels above which assessments/non- conformances should be triggered.

In considering these aspects, the concept of "supporting evidence" was introduced under LGAP 1004 which is required to include "documented information" and "identification documentation" and may include photographs and video surveillance. Other documented information can also be used as supporting evidence.

LGAP 1004 does not impose the use of photographs or video surveillance for all systems; however, where these are used as supporting evidence, LGAP 1004 was drafted to introduce requirements for ensuring such imagery is:

a) captured as the traceable event occurs or (for photographs) immediately afterwards and using equipment set to take a certain type of image which will ensure sufficient image quality;

b) framed and focused with sufficient lighting to:

   i. clearly distinguish (for photographs) identifying characteristics of each animal or (for video surveillance) each animal and the immediate surrounding area; and

   ii. (for photographs) ensure the legibility of any identification numbering or coding;

c) marked with the GPS location where the imagery was captured;

d) correlated with the identification details of the site where the imagery was captured (i.e. the feedlot or abattoir's details such as an address, LGAP Certification Number and GPS location etc.);

e) (for photographs) transmitted in a manner which preserves the quality, framing and details specified;

f) (for video surveillance) adequately protected from improper use (e.g. theft, unauthorised access and manipulation etc.);

g) (for video surveillance) viewed immediately after each event to ensure movement information correlates with what is seen on the footage; and

h) contains the original metadata created when the imagery was captured.

Additional requirements introduced in LGAP 1004 were designed to further strengthen traceability consistent with the MRAG Asia Pacific recommendation. These relate to collecting and storing information on 'registers' (e.g. databases) and transmitting information to 'traceability parties', using effective and secure methods to facilitate transmission in a manner that minimises the risk of tampering and in a format that cannot be easily intercepted and manipulated.

The MRAG Asia Pacific recommendation also focused on minimum periods for the retention of CCTV footage specifically; however, consultation through Stage 1 indicated it would be prudent to ensure any information relied upon for traceability purposes is kept for a specified timeframe. To this end, LGAP 1004 was drafted to include a requirement to ensure any traceability data and supporting evidence is retained for the minimum period required by law in that jurisdiction, or no less than two years (whichever is the greater).

The use of tolerances was given thorough consideration in light of the position conveyed by the Department during consultation that there is no tolerance for leakage under ESCAS. Furthermore, should tolerances for items such as breeders, mortalities and emergency slaughter in particular be introduced, it may create a perception that there is an allowable tolerance for leakage under LGAP and would obfuscate data related to traceable events.

LGAP currently incorporates requirements for monitoring targets that exist under ESCAS in relation to slips, falls and (for cattle) vocalisation.

The approach under LGAP is that Operators and Facilities are required to monitor certain handling activities (such as loading, unloading and restraint) and track the occurrence of slips, falls and vocalisation. The objective is that monitoring can demonstrate that the targets under LGAP (3% slips, 3% falls and 5% vocalisation) are not exceeded and if they are, corrective action occurs to resolve the cause of the nonconformity. Documented information is maintained to demonstrate monitoring occurs and issues are corrected when they arise.

These requirements were implemented at the request of both industry and government during the original development of LGAP to address the 'inter-audit gap', that is the issue that on the day of the audit practices are compliant however day-to-day there is a risk they may not be. The use of documented information was included in LGAP to align to the ESCAS expectations that there is evidence of these practices occurring day-to-day, not audit-to-audit.

This is a pragmatic approach that ensures Operators and Facilities monitor high risk activities to ensure day-to-day conformity and take action if issues arise. This approach was applied to the concept of tolerances raised in the MRAG Asia Pacific recommendation and requirements drafted in the first version of LGAP 1004.

Rather than introduce tolerances and thereby risk inadvertently creating perceived thresholds for 'allowable leakage', requirements were drafted in the first version of LGAP 1004 relating to monitoring the occurrence of particular incidents. These incidents included those recommended by MRAG Asia Pacific but extended further to address other areas of risk in relation to traceability:

a) identifiers that are lost or replaced (e.g. NLIS tags, visual management tags etc.);

b) feeder or slaughter livestock becoming breeding livestock;

c) livestock losses or mortalities (which would include emergency slaughter); and

d) time taken between livestock exiting the consigning traceability location and entering the destination traceability location.

This monitoring activity was combined with additional requirements under both LGAP 1004 and LGAP 1002 to analyse the outcome of the monitoring and report any irregularities indicated in the analysis to traceability parties and the Program Owner (i.e. AniMark). In particular, LGAP 1004 was drafted to introduce the requirement that reporting to the Program Owner must occur should the analysis indicate the site has exceeded the following targets:

a) 3.5% or greater of identifiers are lost or replaced;

b) 0.15% or greater of livestock leave the site as breeders;

c) losses or mortalities occur which, combined, are greater than:

    i. 1% for cattle and buffalo; and

    ii. 0.5% for sheep and goats.

There were concerns expressed through the project by the author, the Standards Committee and organisations who provided public comment as to the prescriptive nature of some requirements in the new Standard. It was acknowledged that this level of prescription was necessary to fulfil the ALEC Resolution 1.

4.3.1.5 Consideration of LGAP 1004 by the AniMark Standards Committee

The AniMark Standards Committee considered the first Committee Draft of LGAP 1004 at their 18 February 2021 meeting. In general, the feedback and subsequent discussions and determinations showed deep consideration of LGAP 1004 by all Committee members. Feedback and subsequent discussion related primarily to:

- Application of traceability between sites (e.g. transport).
- Clarifying the party responsible for demonstrating conformity.
- Timeframes for tracing animals in relation to the purpose of the system.
- Recording change of ownership as opposed to custody.
- Resolution of images and the use of an outcomes-based requirement rather than prescriptive requirements.
- Timeframes for data transmission.
- Appropriate description of requirements for the secure exchange of data.
- Clarifying requirements in relation to the existence of backup procedures.
- Appropriate record retention periods.
- Monitoring incidents, in particular where the number of livestock exceeds the capacity of the location.
- Appropriate trigger points for reviewing and reporting, in particular amending the monitoring targets for losses and mortalities from 1% for cattle and buffalo and 0.5% for sheep and goats to 3% for all species.
- Refining terminology with respect to:
    - interoperability requirements; and
    - purpose of a traceability system.
- Traceability testing methodology.

The Committee reviewed and discussed all feedback received. The outcome of the discussion was either agreement to change the requirement based on the feedback or the Committee agreeing that no change was required based on further discussion.

AniMark maintains a Feedback Register which captures the details of the Committee's discussions and determinations, along with minutes.

Following the meeting, the changes agreed were made by the project team to LGAP 1004 and an updated version circulated to the Committee on 9 March 2021 for their review. The Committee agreed by circular resolution that LGAP 1004 as updated could proceed to public comment.

4.3.2 Updating the existing LGAP Standards

4.3.2.1 Consideration of existing LGAP Standards by the AniMark Standards Committee

The 18 February 2021 Committee meeting also included a discussion regarding how the introduction of Traceability System Providers under LGAP would need to be reflected in the remaining LGAP Standards.

LGAP 1004 was developed as a "system standard"; however, in line with the recommendations from Stage 2, requirements for how Operators and Facilities then used the system and their obligations for verifying the integrity of the data relied upon by the system were required. The Committee was advised that amendments to the remaining LGAP Standards would be required to give effect to the new Standard.

The Committee also considered whether Traceability System Providers would need to adopt management system requirements and if so, whether this would be best achieved by referencing LGAP 1002 or if a new section in LGAP 1004 should be introduced specifically for management system requirements.

The consensus was that given Traceability System Providers would also include Facilities and Operators and these entities would be familiar with LGAP 1002, it would be better to reference LGAP 1002 rather than duplicate requirements from LGAP 1002 in LGAP 1004. The final application of the LGAP Standards is shown in Fig. 8.

Figure 8: Final application of the LGAP Standards

AniMark LGAP	LGAP1000 Principles & Definitions	LGAP1001 Animal Welfare & Management	LGAP1002 Management Systems	LGAP1003 Chain of Custody	LGAP1004 Traceability Systems *Voluntary*
Facilities (Feedlots, Depots & Abattoirs)	☑	☑	☑		☑
Operators (Exporters & Importers)	☑	☑	☑	☑	☑
Traceability System Providers (Internal or external) *Voluntary*	☑		☑		☑

Changes to the remaining LGAP Standards were made by the project team based on the Committee's discussions. These, along with an explanatory note, were circulated to the Committee on 9 March 2021 and Committee members were asked to provide material feedback on the proposed changes to the existing LGAP Standards by 15 March 2021 so the Standards could be redrafted for public comment. The Committee agreed by circular resolution that the amended LGAP Standards as provided could proceed to public comment at the same time as LGAP 1004.

4.3.2.2 Consideration of public comments by the AniMark Standards Committee

In total, 189 public comments were received and considered by the Committee. One stakeholder requested a two-week extension which was granted, and their feedback was received in time for final consideration by the Committee.

AniMark received four detailed formal submissions, including one from the RSPCA and an aggregated submission, which captured the views of five exporters' ESCAS managers. High-level commentary was submitted by various Approved Certification Bodies (audit companies) and one international traceability system provider. One individual provided nonspecific feedback which was not relevant to the complexities required to be addressed under LGAP and therefore not actionable.

Comments related predominately to LGAP 1004 and specifically:

- the use of percentage trigger levels for reporting;
- the use of an alternative to GPS in supporting evidence where GPS is not available;
- the prescriptive nature of the timeframes included in the public comment draft Standard;
- confusion surrounding requirements for the Traceability System Provider to have processes in place for particular activities but not being responsible for implementing those activities;
- confusion surrounding requirements for Traceability System Providers that also have Traceability Services or Operators and Facilities to implement the processes referred to above.

Following AniMark's standards governance process, the Committee considered all comments received. As shown in Table 3, overall, 70% of comments were accepted or partially accepted by the Committee and no change was required for 21% of comments. The remaining 8% required no action and were noted, or for 3% of the cases, the comments were no longer relevant due to changes made in relation to other comments.

Table 3: Summary of AniMark Standards Committee determinations on public comments

Std	Comments accepted		No change required		Comments partially accepted		Comments noted		Revised		Total
	No.	%	No.	%	No.	%	No.	%	No.	%	
LGAP 1000	1	14%	5	71%	1	14%	0	0%	0	0%	7
LGAP 1001	3	38%	3	38%	2	25%	0	0%	0	0%	8
LGAP 1002	5	83%	1	17%	0	0%	0	0%	0	0%	6
LGAP 1003	0	0%	1	100%	0	0%	0	0%	0	0%	1
LGAP 1004	21	13%	29	17%	99	59%	13	8%	5	3%	167
									Total comments		189
									Proportion of comments accepted or partially accepted		**70%**
									Proportion of comments where no change was required		**21%**
									Proportion of comments noted		**8%**

The Department provided 21 comments separately to the public comment process and these were considered separately to the public comment process with outcomes reported to and considered by the Committee out of session. Of the comments received from the Department, 29% were accepted or partially accepted, 57% required no action and 14% were no longer relevant due to changes made in relation to other public comments.

AniMark maintains a Feedback Register which captures the full details of the Committee's discussions and determinations against each public comment received, along with minutes. The following significant changes were made to LGAP 1004 based on the review of comments:

- The use of percentages as trigger levels for reporting was removed as the Committee was unable to achieve consensus on appropriate percentages and insufficient robust feedback was provided through the comment process to provide direction. The Standard was modified to place the onus on monitoring for incidents, anomalies and irregularities on the appropriate parties with requirements focusing on correction and updating traceability parities and Program participants. The Committee acknowledged this was a departure from the resolution from ALEC however better reflected the practical reality of the environment the Standard was required to operate within and would be more consistent with industry stakeholder needs.
- The provision for an alternative to GPS to be used was included in relation to supporting evidence in acknowledgement that in some instances GPS is not always available or accessible. The Committee acknowledged this was a departure from the resolution from ALEC however better reflected the practical reality of the environment the Standard was required to operate within and would be more consistent with industry stakeholder needs.
- Higher level system purpose timeframes were revised from 72 and 48 hours to 10 days based on industry stakeholder feedback. Activity based timeframes were removed and the requirements rewritten to be more outcomes focused. The Committee acknowledged that the inclusion of prescriptive timeframes was in response to the ALEC resolution and the amendments represented a balance between prescriptive requirements to accommodate the ALEC resolution and outcomes-based requirements to accommodate best practice in standards design.
- The monitoring and reporting section was revised to ensure greater clarity regarding the Traceability System Provider being responsible for developing processes and the Traceability System Provider that also offers traceability services then being responsible for implementing those processes.

Following the meeting, the changes agreed were made to the LGAP Standards by the project team and updated versions circulated to the Committee on 14 June 2021 for their review. The Committee endorsed the LGAP Standards and commended them to the AniMark Board for approval.

4.3.3 Updating the existing LGAP Rules

Following the release of the LGAP Standards for public comment, the LGAP Rules were amended by the project team to reflect the introduction of Traceability System Providers as parties to LGAP and associated changes. In addition, a risk assessment for Traceability System Providers was also developed.

Feedback through the public comment process, along with the AniMark Standards Committee determinations were then considered and the LGAP Rules further updated.

4.3.3.1 Developing a risk assessment for Traceability System Providers

The risk assessment methodology utilised for Operators and Facilities to determine their surveillance frequency (previous Fig. 5) was extended to include Traceability System Providers. This included the identification of risk factors and control measures, and the process largely drew on the findings of Stage 1 and that used in the development of LGAP originally.

Risk factors and control measures considered in the risk assessment for Traceability System Providers are summarised in Table 4.

Table 4: Summary of risk factors and control measures for Traceability System Providers

Risk factors	Control measures
Traceability (personnel)	• The manner in which human resources are provided and utilised in conjunction with the system
Traceability (technology)	• Use of video surveillance
Equipment and infrastructure (equipment)	• Manner in which the equipment and infrastructure is provided and utilised in conjunction with the system
Traceability (identification)	• Method of identifying animals
Traceability (movement)	• Method of capturing animal movements
Data collecting, capturing and transmitting	• Method of collecting captured animal movement data • Method of transmitting the data collected to the register • Timeframe of data transmission
Traceability register	• The type of register • Use of meta data or history
Operations	• Type of system
Performance	• Past Program performance • Current Program performance • Feedback and complaints

4.3.3.2 Consideration of the LGAP Rules by the AniMark Rules and Integrity Committee

AniMark's Rules and Integrity Committee completed their initial review of the updated LGAP Rules in June 2021. Final acceptance of the LGAP Rules is dependent on the Exporter Supply Chain Assurance Operations (ESCAO) approved arrangement process AniMark is undergoing with the Department, the timeframe for which is outside the scope of this Project. Any amendments required to the LGAP Rules as a result of the approved arrangements process will be managed by AniMark.

5. Summary

At the request of ALEC, a new standard for control and traceability under LGAP was developed by Schuster Consulting Group on behalf of AniMark.

LGAP 1004 Livestock assurance - Requirements for traceability systems used by Operators and Facilities has been researched, drafted, reviewed, finalised and adopted by AniMark. In addition, amendments to the existing LGAP Standards and Rules were made and adopted to enable the operation of LGAP 1004.

Requirements for the new standard were drafted specifically to address the challenges identified through the research undertaken in Stage 1 and in consideration of the MRAG Asia Pacific recommendations, the ALEC resolutions and the complexities and practicalities which exist within the environment LGAP operates.

LGAP 1004 is a traceability system standard that sets requirements for Traceability System Providers. The Standard has been written to accommodate the diversity of practices and the complexities that currently exist in relation to controlling and tracing livestock in a decentralised manner across an international market.

LGAP 1004 has been written as a voluntary standard, which is available for Operators, Facilities and Traceability System Providers to adopt as they see fit. Operators and Facilities can demonstrate their commitment to improving traceability performance in one or all markets, by achieving LGAP 1004 certification for their own traceability system or using a third-party provider with a traceability system certified to LGAP 1004.

Building on the recommendations from the MRAG Asia Pacific report and in consideration of the challenges, practicalities and complexities associated with C&T identified through this project, LGAP 1004 will:

- enable for a more equitable distribution of responsibility and accountability throughout livestock supply chains;
- provide greater clarity regarding appropriate traceability practices, including specifying image resolutions (where used), timeframes to locate livestock (10 days), requiring entities to have processes for lost and replacement tags and mandating periods for data storage;
- specify monitoring requirements that will help to detect and deter leakage;
- allow for Traceability System Providers to be integrated into the LGAP framework; and
- facilitate the continual improvement methodology, whereby certified entities moving out of conformity have an opportunity to address issues and maintain their certification.

Every effort was made to accommodate the ALEC requests emanating from the MRAG Asia Pacific recommendations, however during the deliberations of the Standards Committee it was identified that several requirements were not practical to incorporate, these key areas included:

- Mandating the use of GPS – the Committee acknowledged that not all regions have GPS and the Standard needed to allow for an alternative (e.g. a fixed reference point clearly visible in the frame of the camera);

- Requirement for "*Real time monitoring*" – the Standard needed to accommodate the diversity of animal management systems around the world and it was determined that in the first instance, a requirement of 10 days to locate an animal would be the most practical timeframe to mandate;

- Development of "*levels of tolerances for mortalities, emergency slaughters and tag replacements*" – the Committee debated this matter at length and a balanced and inclusive outcomes-based approach was established, whereby there is a requirement for Traceability System Providers to have their own review system, where they can specify levels that suit their species and markets. The Committee was of the view that this approach would best accommodate the diversity of animal management systems but ensure that System Providers have procedures that monitor, detect and deter fraud.

The project timeline was ambitious and scheduled to occur over a 16-month period. The project was successfully delivered in advance of the scheduled timeframe (<12 months) and to budget, with all objectives and reporting milestones met.

While outside the scope of this project, AniMark will need to undertake significant work to make LGAP 1004 certification services available, including:

- update AniMark's ESCAO Approved Arrangement application and/or secure the Department's approval of a significant variation of the ESCAO Approved Arrangement (depending on the Department's application approval status);

- finalise updates to the LGAP Rules based on the outcomes of the ESCAO Approved Arrangement process and complete necessary governance processes;

- commission updates to the AniMark IT Conformance System, to accommodate the new certification requirements;

- develop guidance materials, checklists and templates for Operators, Facilities, Traceability System Providers, Approved Certification Bodies and Approved Auditors;

- develop training materials and delivery of training for Operators, Facilities, Traceability System Providers, Approved Certification Bodies and Approved Auditors; and

- secure an extension of services from Approved Certification Bodies, negotiate fees and undertake auditor assessment and approval.

The AniMark Board has set an ambitious target implementation date of 1 November 2021 to make LGAP 1004 certification services available, noting that this date does not impede the current availability of LGAP, which has been available to exporters to use to assist with their ESCAS compliance obligations since 28 October 2020.

Appendix 1: The modified LGAP Standards (LGAP 1000-1003)

Provided as a separate document.

Appendix 2: *LGAP 1004 Livestock assurance – Requirements for traceability systems used by Operators and Facilities*

Provided as a separate document.

Appendix 3: The modified LGAP Certification Rules

Provided as a separate document.