Integrity Systems
red meat customer assurance

Background Paper

Senate inquiry into the feasibility of a National Horse Traceability Register for all Horses

About the Integrity Systems Company

Established in 2016, the Integrity Systems Company (ISC) has set out to deliver on industry's vision of a single entity delivering an integrated, efficient and effective red meat integrity system. ISC is a wholly-owned subsidiary of Meat & Livestock Australia (MLA) and is responsible for delivering the red meat industry's integrity system and significant components of MLA's Digital Value Chain Strategy.

With a team of 37 skilled professionals, ISC plays a central role in equipping industry with the tools that ensure the food safety, animal welfare, biosecurity and traceability of Australian red meat for our domestic and international customers, and drives the development and delivery of digital technologies and data systems to strengthen the integrity system, and enable industry to extract greater value from our integrity system programs.

ISC is supported by a skills-based Board and an industry Taskforce which includes representatives from all red meat peak industry councils. The Taskforce provides advice to ISC on operational matters related to the delivery of the integrity programs. The industry-government partnership of SAFEMEAT, develops policy and sets the strategic direction for the integrity system.

The Australian red meat integrity system

A system of on-farm assurance, animal identification and traceability from paddock to plate guarantees the integrity of Australia's $18.4 billion red meat industry.

The integrity system consists of the Livestock Production Assurance (LPA) program, National Vendor Declarations (NVDs) and the National Livestock Identification System (NLIS).

- **LPA** – is an independently audited, on-farm assurance program that demonstrates best practice livestock management in relation to food safety, animal welfare and biosecurity. More than 200,000 livestock producers participate in the voluntary LPA program.
- **NVDs** – provide a declaration of livestock history as animals moves along the value-chain — between properties, to saleyards or to processors. In 2017, a centralised electronic National Vendor Declaration (eNVD) platform was developed by ISC and launched for broad industry use enabling declarations to be entered and accessed electronically through the supply chain. More than 21% of livestock consignments are now captured through the eNVD.
- **NLIS** – is the national system for the identification and traceability of cattle, sheep and goats. Underpinned by State and Territory legislation, NLIS involves three key elements: an animal identifier (either visual or electronic); the identification of a physical location via a Property Identification Code (PIC), and a web-accessible database to store and correlate individual animals and their movements.

Each of these program elements plays a part in protecting the disease-free status of Australian red meat and underpins the marketing of our product as clean, safe and natural. Australia's red meat integrity system ensures the red meat and livestock industry can stand by what it sells.

Red meat traceability system development

Since the 1960's, the Australian red meat and livestock industry has worked collaboratively with government to develop and implement traceability systems to support the control and eradication of diseases, promote best practice biosecurity, and to underpin market access through product traceability, food safety and integrity.

Table 1 provides a brief history of Australia's livestock traceability system development, and highlights the need for on-going improvement of traceability systems over time to meet the needs of global markets, customers and consumers.

Table 1: History of Australian livestock traceability systems

YEAR	TRACEABILITY ENHANCEMENT
1960s	Bovine brucellosis and tuberculosis eradication campaign (BTEC) drives improved animal traceability.
1975	Property Identification Codes (PICs) and mandatory (mob-based) tail tagging fully operational.
1980s/ 1990s	Food safety and traceability is paramount as Australia becomes the world's largest exporter. • National Vendor Declaration (NVD) introduced. • A number of residue and food safety related incidents impact on market access and drive the need for improved traceability systems. • Initial development of individual animal identification systems using RFID commences.
1999	Introduction of voluntary NLIS system to meet EU market requirements.
2002	Introduction of mandatory NLIS identification for calves moving off properties in Victoria.
2003	The Primary Industry Ministerial Council (PIMC) endorsed the mandatory introduction of NLIS. Each jurisdiction was responsible for developing timeframes for implementation.
2004	Legislation implemented in all jurisdictions to underpin mandatory NLIS. Introduction of mandatory NLIS identification for calves moving off properties in NSW, TAS and SA. Movement recording in Saleyards and Abattoirs commences.
2005	Mandatory NLIS identification for all cattle moving off properties. Mandatory movement recording in all Saleyards and Abattoirs.
2006	Mandatory property to property movement recording introduced in all jurisdictions.
2006	NLIS (Sheep & Goats) commenced, incorporating sheep and farmed goats: • All sheep and goats must be tagged before they move from any property to a saleyard, abattoir or another property. • Documentation must accompany each consignment. • Identification is property-based, using visual ear tags.
2009	Central database for recording mob-based sheep and goat movements was established, with mandatory movement recording phased in: • 1 July 2009: Saleyards • 1 January 2010: Abattoirs, feedlots, live export and goat depots • 1 July 2010: Property to property and shows
2017	Mandatory electronic identification introduced for sheep and goats in Victoria, with mandatory movement recording phased in: • 31 December 2017: Abattoirs • 31 March 2018: Saleyards and property to property movements

National Livestock Identification System – challenges and learnings

In its role as NLIS Administrator, ISC has had substantial experience in the development and implementation of national livestock traceability systems. Since 1999, MLA (followed by NLIS Ltd, and now ISC) has been responsible for the Administration of the central NLIS database, the NLIS device accreditation process, communication, education and training of NLIS participants in how to use the NLIS database, and by supporting participants in understanding the general requirements of NLIS.

Since its establishment, the NLIS system has evolved significantly and is recognised globally as one of the most advanced livestock traceability systems in the world. However, the implementation of NLIS has not been without its challenges. The key challenges and learnings associated with the implementation of the red meat livestock traceability system, are summarised in Table 2.

Table 2: Traceability system implementation – challenges and learnings

CONSIDERATIONS	CHALLENGES	LEARNINGS
Staged implementation: by state, sector and species	• Complexity in communicating requirements, to both participants and customers, based on variable implementation timeframes across states and sectors	• Where possible, agree on a national timetable for implementation • Minimise the lag for implementation across sectors to reduce gaps in data/information
Different requirements in different jurisdictions	• Complexity in communicating requirements to both participants and customers • Ability to achieve national traceability performance standards where state-based exemptions/pathways exist • State-based requirements needing to be accommodated in a national database	• Agree on the requirements at a national level • Agreed exemptions/pathways should apply at a national level (limit state-based variations)
Different requirements across animal species	• Different requirements across species with regards to animal identification methods creates confusion and inconsistent rules • For sheep and goats, mob based identification is accepted in all states except Victoria which has moved to mandatory individual EID identification for sheep and goats • Cattle requires individual EID identification	• A consistent national approach to animal identification requirements across species would create greater efficiencies in traceability across the supply chain • Individual identification systems offer greater benefits to management systems and the supply chain
Communication and education	• Resources allocated for communication and education were primarily to support initial implementation • Resources to support communication and education (both industry and government) were eroded over time as the system shifted from implementation to business as usual	• On-going and sustained investment in communication/education must be factored into the system design • Compliance cannot be achieved without on-going communication and education • Ensure that there are regular 'touch-points' with participants to remind them of the 'what' and the 'why'
Industry turnover	• On-going turnover within the industry, requires continual education of new entrants into the industry	• Targeted and on-going education programs need to be in place to ensure new industry participants understand their obligations

CONSIDERATIONS	CHALLENGES	LEARNINGS
	• Limited mechanisms for regular updates of participant contact details once system established	• Design the system in a way that requires participants to regularly update their contract details
Compliance and enforcement	• Defining the role of industry versus the role of government in relation to compliance and enforcement • Reduction in resources to support compliance and enforcement over time • Penalties for breaches seen as not significant enough to discourage non-compliance	• Compliance and enforcement activities need to be well resourced to be impactful • Both industry and government should play a role in supporting compliance
Technology adoption	• While the NLIS is based on technology, it also caters for those unwilling/unable to engage with or adopt technology, creating complexity in system design and implementation • Complexity or inability to smoothly integrate technology with other software or hardware systems negatively impacts adoption	• Agree on the minimum technology requirements and deliver that technology in the most simple and cost-effective way • Technology needs to present a value proposition beyond compliance, in order to drive broad-based adoption
Value proposition	• Because something is legislated is not enough of a reason for participants to comply with the system requirements	• Participants need a compelling reason to comply with the system – 'What's in it for me?' • Value propositions need to be established across all participant segments to encourage end-to-end compliance
Funding	• Funding has eroded over time as industry and government priorities have shifted • Inability to establish a secure, longer-term funding stream for the system	• Funding commitments by industry and government stakeholders need to be established upfront • Funding needs to be sustained at a level that supports compliance objectives and continuous improvement

The future for red meat traceability and integrity

As an industry heavily reliant on global export markets, it is essential that the Australian red meat industry maintains a competitive edge, by understanding and responding to customer requirements, by leveraging technology and data to both simplify and strengthen the integrity system, and to ensure that customers continue to have absolute trust in the Australian red meat product, now and into the future.

Recognising the need for continual improvement of the red meat integrity system, and the increasing opportunities that technology and data present, the red meat industry initiated the development of the red meat *Integrity System 2025 Strategic Plan*. The Strategy was developed through extensive consultation with industry and government and was informed by a comprehensive analysis of the current state of the existing programs (LPA, NVDs, NLIS), along with consumer insights, and stakeholder perspectives on the opportunities for the system overall.

Through the development of the *Integrity System 2025 Strategic Plan*, the red meat industry has acknowledged the importance of on-going investment and improvement of its integrity system to underpin the access that Australian red meat has across more than 100 markets globally, and to maintain its strong reputation for traceability, biosecurity and food safety.

The *Integrity System 2025 Strategic Plan* has been designed to ensure that there is an on-going focus on strengthening the current system so that it continues to meet the expectations of customers, while R&D and new technology development is progressed and adopted throughout the industry, enabling the red meat industry to maintain its competitive edge for years to come. The strategy also positions ISC to have the capacity to expand the management of integrity systems beyond the red meat and livestock sector, and potentially become the national leader for administering all agricultural integrity systems so that greater efficiencies are created and the significant benefits of centralised and co-ordinated data management can be achieved.

Involvement across national traceability reform initiatives

ISC has been a participant in the National Traceability Project that was initiated by the Agriculture Senior Officials Committee (AGSOC) in 2017. The Red Meat and Livestock Action plan was developed and submitted to this process (see appendix 1).

Through SAFEMEAT Partners, ISC has also been actively involved in supporting initiatives being driven by the National Biosecurity Committee (NBC), which has completed a legislative gap analysis and a cross species gap analysis which aim to support reform required to generate greater harmonisation and efficiencies across the current red meat and livestock traceability system.

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Updated 2019

Traceability action plan: red meat and livestock

Chapter five of the National Traceability Framework describes the elements for the industry to consider when developing an action plan. The action plan should reflect that the development of an action plan is an industry responsibility but there are benefits from doing this in partnership with government.

The action plan should include good governance arrangements, enable the provision of timely and accurate information about the product and data management, be cost effective and engender the trust of consumers and trading partners. It should ideally deliver five outcomes. The success of each outcome should be measured qualitatively and used to inform any future amendments to the plan (refer to the Outcomes of traceability systems in chapter five of the National Traceability Framework).

The action plan enables industries or industry groups to provide a snapshot of their current traceability systems and their future vision. Each industry will have a more detailed plan to support the snapshot provided in this document.

The action plan (and overarching framework) will be used by industry and governments to identify areas of collaboration, which may include allocation of resources. This plan may also be used to support export market access and shape global positions on traceability.

The action plan is a working document. Governments will work with industry to support, review and amended as necessary (e.g. 6 monthly and annually).

Traceability action plan

Industry	Current arrangements Describe your industry's current traceability system(s), and actions your industry is taking. For a regulated system, write 'regulated'.	Comments For example: Does your industry have systems in place or is more work required? Are there any impediments? Consider whether there is visibility across the supply chain and how quickly the product can be traced using your current systems.	Where to next Describe your industry's vision for a traceability system to be achieved in the next five years or beyond, including mechanisms to increase end-to-end capabilities and the potential use of technologies to record/share information. Estimate the value proposition of the proposed enhancements.	Steps/time frames/issues For example: What are the steps to achieve your industry's vision for future traceability? What issues and risks does your industry need to address, and how will your industry do this? How will your industry achieve broad uptake? How will these enhancements improve and/or protect your industry's market access?
Red meat and livestock industries including beef, sheep, goats, dairy	The National Livestock Identification System (NLIS) and National Vendor Declarations (NVDs) form the Australian meat and livestock industries traceability system. Strengthening the traceability system is the Livestock Production Assurance program (LPA), which is the Australian livestock industry's on-farm assurance program covering food safety, animal welfare and biosecurity. It provides evidence of livestock history and on-farm practices when transferring livestock through the value chain (see https://www.mla.com.au/meat-safety-and-traceability/red-meat-integrity-system/about-the-livestock-production-assurance-program/). These systems are managed by the Integrity Systems Company, a wholly owned subsidiary of Meat and Livestock Australia. NLIS is endorsed by major producer, feedlot, agent, saleyard and processor bodies and is ISO 9001 certified. In addition to this, it is underpinned by State/Territory legislation, which forms the regulatory framework for the system. The NLIS combines three elements to enable the lifetime traceability of animals: • an animal identifier (a visual or electronic ear tag known as a device) • identification of a physical location by means of a Property Identification Code (PIC) • a web-accessible database to store and correlate movement data and associated details. As animals are bought, sold and moved along the supply chain, they must be tagged with an NLIS-accredited tag or device which has been approved under the current RFID standard or Visual tag standard. Each livestock movement between locations with a different PIC is recorded centrally on the NLIS Database by people with NLIS accounts. NLIS accounts are free to open and operate. Using this information, the NLIS is able to provide a life history of an animal's residency, and to discern which other animal's livestock may have come into contact with. The NLIS is required to facilitate the traceability of animals in accordance with the National Traceability and Performance Standards. Statuses may also be assigned to individual animals (provided they are electronically tagged) or to properties to record pertinent information about these animals and properties on the NLIS. Any device or property statuses that indicate animals may pose a biosecurity or health risk are reported through the supply chain to ensure that the risks can be effectively mitigated. This maintains the safety, quality and integrity standards of Australian red meat and livestock and reduces the impact of a potential livestock disease epidemic or residue incident. Each time livestock are bought, sold or moved off a property, the livestock consignment must be accompanied by a form of movement documentation. Usually this is a National Vendor Declaration (NVD), but other forms of movement documentation (such as Waybills or Travelling Stock Statements) may also be used. Industry has moved to implement an electronic vendor declaration (eNVD) which removes the need for relying on a paper based system.	NLIS and the NVD systems were introduced in the nineties to enhance Australia's ability to trace cattle during disease and food incidents, but were expanded to also include sheep and goats in 2009. NLIS reflects Australia's commitment to biosecurity, traceability and food safety and provides a competitive advantage in a global market. The Australian meat and livestock industry's traceability system is globally recognised as the world leader in having a strong and comprehensive system in place. Industry and government work collaboratively to continually strengthen the systems. Industry in partnership with state governments test the performance of the traceability system through the SheepCatcher and CowCatcher exercises. These exercises assess system performance against the National Traceability and Performance Standards and identify areas for advancement.	The Integrity Systems Company (ISC) have completed the delivery of the Integrity System 2025 Strategic Plan (IS2025 plan). The meat and livestock industries have entered a new era where there is tremendous opportunity arising from digital technology, data systems and analytics, so it is critical the industry in partnership with government capitalise on this and strengthen our integrity system from the new generation of innovation that is available. There are significant opportunities to grow our competitive advantage through enhancements to the integrity system, while creating real value for all participants within the value chain. By accessing and using the latest technology and data systems, industry's vision is that the integrity system will become a seamless and valued tool, helping to create operational and cost efficiencies, while ensuring that customers retain absolute trust in the Australian red meat product. The vision for the future is "An integrity system trusted globally as underpinning a quality product, produced to rigorous standards, and embedded in the culture of Australian livestock management". This will include: 1. Whole-of-life traceability of livestock is achieved through automated identification of animals and locations 2. Real-time monitoring and tracking of livestock 3. NVDs are replaced by automated verification systems 4. The integrity system happens in the background 5. Data and information is used to drive productivity through the value chain 6. Data sharing is fundamental to day to day business operations and is driving business efficiencies 7. Compliance is implicit within the integrity system 8. Industry participants are proud of our integrity system and understand the value it delivers to their businesses 9. Consumers are actively seeking out Australian red meat based on our integrity system 10. Consumers can verify the origin of Australian red meat. The plan has three key strategic priorities: 1) Ensuring our integrity system continues to deliver 2) Pursing and adopting new integrity approaches and technologies 3) Leveraging integrity data to add value through the supply chain In addition to the implementation of the Integrity Systems 2025 plan, industry is working collaboratively with Australian government through SAFEMEAT and NBC to identify shorter-term opportunities to improve the current traceability system, such as harmonisation of legislation and broad-based adoption of the eNVD.	The IS2025 plan was developed through considerable consultation across industry and government. The IS2025 implementation plan is currently under development, to be finalised by the end of March 2019. The implementation plan includes an impact and risk assessment, consolidation of outcomes, outputs, resource requirements, budget and evaluation plan (including annual key performance indicators). Commencement of the plan will be June 1, 2019 (FY20). A significant success factor underpinning the strategy will be the need to source significant investment from government and leverage partnerships with research and development organisations with a global focus and understanding of the latest technology available. A focus for ISC will be to secure investment and partnerships in Q1 FY20 to enable the most efficient delivery of outcomes and uptake within the ambitious timeline outlined in the IS2025 strategy.