AMPC
AUSTRALIAN MEAT PROCESSOR CORPORATION

Improving AAWCS understanding and international benchmarking

Contents

1.0 Abstract

This project was undertaken to support the Australian red meat processing industry in understanding and responding to evolving animal welfare regulations. With the introduction of new national welfare standards and updates to state-based legislation, processors need practical tools and guidance to ensure compliance and maintain community trust. The project aimed to provide clear, accessible information and support to help processors meet their animal welfare responsibilities and align with both national and international expectations.

The project was delivered through a combination of targeted industry engagement, regulatory review, tailored training, and comparative analysis. Key activities included reviewing a section of the draft national welfare standards, delivering a workshop for Tasmanian processors, analysing how Australian standards compare internationally, and identifying opportunities to use new technologies, such as artificial intelligence, to support conformity and compliance. Key results included the successful delivery of tailored training that was well received by participants, confirmation that the AMIC Industry Animal Welfare Standard aligns with major international standards, and identification of AI technologies that could support future animal welfare monitoring and verification.

The project benefits the industry by improving understanding of animal welfare requirements, supporting compliance with updated regulations, and highlighting future technologies that may reduce the regulatory burden while improving welfare outcomes. It also provides a strong foundation for continued industry input into the development of practical and achievable animal welfare standards.

2.0 Executive summary

This project was undertaken to support the Australian red meat processing industry in navigating evolving animal welfare regulations. With the transition from Model Codes of Practice to the Australian Animal Welfare Standards and Guidelines (AAWS&G), meat processors are now required to comply with new, nationally harmonised welfare expectations. The project aimed to assist industry in interpreting these changes, improving practical compliance, and identifying opportunities for innovation in animal welfare assurance. The target audience included red meat processors, industry standards developers, and regulatory stakeholders, particularly those involved in the Australian Livestock Processing Industry Animal Welfare Certification System (AAWCS). The research findings will help ensure processors are better prepared for regulatory changes and maintain public trust through credible welfare assurance practices.

Objectives

The project had the following objectives, all of which were achieved:

➢ Assist industry in reviewing and responding to the AAWS&G consultation draft, including a detailed review of the "Restraint" section.

➢ Deliver tailored training workshops to support red meat processors in understanding their regulatory responsibilities.

➢ Review legislative changes proposed by state and territory governments and provide feedback or support to industry.

➢ Benchmark the AMIC Industry Animal Welfare Standard (3rd Edition) against key international standards.

➢ Explore how artificial intelligence (AI) could be used to enhance compliance and verification in animal welfare auditing.

Methodology

➢ Stakeholder consultation and document review to develop industry responses to the AAWS&G draft.

➢ Design and delivery of in-person training workshops on animal welfare responsibilities for processing staff.

➢ Desktop comparison of the AMIC Industry Standard with global animal welfare frameworks (WOAH, NAMI, RSPCA UK).

➢ Scoping analysis of AI applications for real-time monitoring and verification in processing establishments.

Results / Key Findings

➢ The AMIC Standard is broadly aligned with international best practice, with some opportunities for enhancement.

➢ Workshops improved understanding and readiness among Tasmanian processors to meet animal welfare expectations.

➢ The AI scoping review identified promising technologies (e.g., video analytics, sensors) that could reduce regulatory burden and improve compliance.

➢ Structured, early industry involvement in regulatory development strengthens both the practicality and acceptability of standards.

Benefits to Industry

➢ Improved processor readiness for updated animal welfare standards and guidelines.

➢ Clear guidance on how to achieve and demonstrate conformity with AAWCS and other certification schemes.

➢ Identification of future RD&E opportunities that can reduce compliance costs and improve animal welfare outcomes.

➢ Foundation for further investment in digital technologies to enhance transparency and efficiency in animal welfare assurance.

Future Research, Extension, Adoption and Recommendations

To build on the findings of this project, future research should explore the practical integration of artificial intelligence technologies for real-time monitoring and verification of animal welfare compliance in processing facilities. Extension efforts should focus on developing accessible digital training tools, such as e-learning modules and video resources, to broaden industry understanding of welfare requirements. Industry adoption can be strengthened by facilitating greater processor involvement in future updates of the AMIC Industry Standard (and associated certification system) and related guidelines, ensuring that standard remains both practical and evidence-based.

3.0 Introduction

The Australian red meat processing industry is undergoing a period of significant regulatory transition, with the gradual replacement of Model Codes of Practice by the Australian Animal Welfare Standards and Guidelines (AAWS&G). The introduction of the Australian Animal Welfare Standards and Guidelines for Livestock at Processing Facilities, developed under the leadership of the Queensland Department of Agriculture and Fisheries (DAF), represents a major evolution in national welfare regulation. However, this transition also presents challenges for

processors who must now interpret and implement new, often more rigorous, standards while maintaining operational efficiency and meeting certification requirements.

This project addressed an important knowledge and capability gap within the industry: the need for clear, practical guidance on understanding and responding to emerging animal welfare regulations. In particular, the project focused on the Australian Livestock Processing Industry Animal Welfare Certification System (AAWCS), an independently audited program that helps meat processors demonstrate conformity with industry best practice. As processors face increasing expectations from regulators, consumers, and certification bodies, there is a growing need for consistent, evidence-based tools and training to support implementation and verification of welfare standards.

The project provided:

➢ Expert review of a draft AAWS&G section ("Restraint") to reflect operational realities,

➢ Training workshops tailored to processor needs,

➢ A benchmarking analysis of the AMIC Industry Standard against global frameworks,

➢ A review of how artificial intelligence could enhance compliance.

The outcomes of the research will inform future revisions of the AAWCS, guide processor training strategies, and shape future investment in digital tools for welfare assurance. By bridging regulatory developments and real-world practice, this project helps safeguard both animal welfare and industry sustainability.

4.0 Project objectives

Model Codes of Practice for the Welfare of Animals are gradually being replaced by the Australian Animal Welfare Standards and Guidelines. The Australian Animal Welfare Standards and Guidelines for Livestock at Processing Facilities (AAWS&G) have been developed by the Animal Welfare Task Group (AWTG), led by the Queensland Department of Agriculture and Fisheries (DAF) and involving input from a stakeholder advisory group (SAG) which included representatives from meat industry, veterinary science, animal welfare and consumer organisations. This extensive body of work has resulted in a consultation draft, which is now available for further review and comment. In addition, other state and territory governments are updating their animal welfare legislation and the Tasmanian Government is developing its own animal welfare standard for processors. The researcher will assist industry by undertaking a review of the legislative changes proposed by state and territory governments and provide written comments or support. This may involve the development of presentations and guidance material, and participation in processor workshops or similar. In light of these developments, the red meat processing industry needs to ensure that current practices, internal standards, and certification programs remain aligned with both existing and emerging regulatory expectations. This project milestone was designed to support this goal by providing analysis, practical and guidance to help processors meet and adapt to new compliance demands.

Milestone	Achievement criteria	Due date	Status
1	Initial industry support group meeting completed. Milestone report, including any supporting documentation from the support group meeting, submitted to and approved by AMPC.	22/11/2023	Completed
2	Small section review and revision completed - for submission to QDAF. Milestone report submitted to and approved by AMPC.	15/12/2023	Completed
3	Participate in a workshop with Tasmanian red meat processors to support them in understanding their regulatory responsibilities concerning animal welfare. Milestone report submitted to and approved by AMPC.	19/04/2024	Completed
4	Review the legislative changes proposed by state and territory governments and proved written comments to industry or support through presentations if required. Participate in processor workshops if required Milestone report submitted to and approved by AMPC.	24/04/2025	Completed
5	Undertake a desktop gap analysis of the AAWCS against global standards, assess the use of AI to comply with various AAWCS requirements and assist with updates to AAWCS and its guidelines. Milestone report submitted to and approved by AMPC.	09/05/2025	Completed
6	Final industry DRAFT Final report and SnapShot submitted to and approved by AMPC.	19/05/2025	Completed

4.1 Milestone 1 and 2 objectives

Milestones 01 and 02 involved the completion of initial meetings with AMPC and AMIC and the development of the small section of the draft for industry approval and for presentation to QDAF. This was achieved in the following steps:

➢ Meeting with AMPC/AMIC industry support group to discuss project objectives and confirm selection of CD AAWS&G for the small section review

➢ Development of comments template

➢ Review of humane killing section – Restraint

➢ Amendments to small section completed

4.2   Milestone 3 objectives

The objective of this Milestone was the development and delivery of a workshop session for Tasmanian processors to support them in understanding their regulatory responsibilities concerning animal welfare. The scope of the session included (but was not limited to) identification of risks to animal welfare during processing and principles of animal welfare assessment to demonstrate fulfilment of the AMIC Industry Standard. The overall objective of the session was to improve understanding of the animal welfare requirements included in the 'Australian Livestock Processing Industry Animal Welfare Certification System' or AAWCS. AAWCS is an independently audited certification program used by livestock processors to demonstrate compliance with the industry best practice animal welfare standards from receival of livestock, to the point of humane processing. This benefited the meat processing industry by promoting adherence to good animal welfare practices, potentially improving animal welfare outcomes, and ensuring conformity with independently audited certification programs. Consequently, processors were better equipped to demonstrate their commitment to humane animal management and slaughter practices, reducing the risk of regulatory penalties and enhancing consumer trust.

4.3   Milestone 4 objectives

The objectives of this Milestone were:

➢   Review the legislative changes proposed by state and territory and provide feedback.
➢   Develop and deliver additional workshop sessions for meat industry establishments to support them in understanding their regulatory responsibilities concerning animal welfare.

4.4   Milestone 5 objectives

The objective of this milestone was to complete a scoping desktop gap analysis of the AMIC Industry Animal Welfare Standard, a key component of the Australian Animal Welfare Certification System (AAWCS). The analysis compared the AMIC Standard with selected international animal welfare standards to identify areas of alignment, strength, and potential improvement. The milestone also included a brief overview of how artificial intelligence (AI) technologies could be used to support compliance with AAWCS requirements and enhance monitoring and verification processes. In addition, support was provided for updates to the AAWCS standard and guidelines, particularly in response to new requirements for mandatory video surveillance.

5.0   Methodology

The project employed a multi-stage methodology aligned with each of the defined milestones. These methods were selected to ensure comprehensive stakeholder engagement, regulatory review, and scoping analysis of the AMIC Industry Animal Welfare Standard. The overarching aim was to support the red meat industry in understanding and responding to evolving animal welfare regulatory and conformity assessment frameworks.

5.1 Milestones 1 and 2 - Stakeholder engagement and initial standard review

The first phase involved stakeholder consultation and preliminary analysis of the *Australian Animal Welfare Standards and Guidelines for Livestock at Processing Facilities* (AAWS&G). Key activities included:

➢ Convening an initial meeting with the AMPC/AMIC industry support group to confirm project direction and agree on a focus area within the draft AAWS&G.

➢ Developing a comments template to facilitate structured input.

➢ Reviewing and revising a selected section of the consultation draft ("Humane Killing – Restraint") for submission to the Queensland Department of Agriculture and Fisheries (QDAF), incorporating industry feedback.

These milestones ensured that initial project deliverables were informed by industry priorities and contributed to the national consultation process.

5.2 Milestones 3 and 4 - Regulatory engagement and industry training

These milestones focused on improving industry understanding of animal welfare responsibilities through direct engagement with processors. Dedicated workshops were designed and delivered (3 sessions) to red meat processors, with a focus on:

➢ Identifying key risks to animal welfare during processing.

➢ Clarifying the requirements of the AMIC Industry Standard and the broader Australian Animal Welfare Certification System (AAWCS).

➢ Demonstrating how these standards support compliance with regulatory expectations and certification outcomes.

The workshop session was delivered in PowerPoint, with the opportunity for questions at the end of the allotted time.

The session included the following subject areas:

➢ Principles of animal welfare

➢ Animal welfare assessment

➢ Introduction to the AMIC Standard and Implementation Guide

➢ Performance evaluation

➢ Livestock handling

➢ Livestock restraint, stunning and slaughter

➢ Assessment of effective stunning and slaughter

The session promoted consistent interpretation of animal welfare principles and built capacity to meet independently audited certification requirements.

5.3 Milestone 5 - Comparison with International Standards and AI Opportunities

A desktop review was conducted to compare the AMIC Industry Animal Welfare Standard (3rd Edition) with three key international animal welfare standards: the WOAH Terrestrial Animal Health Code (Chapter 7.5), the North American Meat Institute (NAMI) Animal Handling Guidelines (2024), and the RSPCA (UK) Welfare Standards. These standards were selected for their global relevance and influence.

Using the structure of the AMIC Standard as a framework, each provision was assessed for alignment based on specificity, verifiability, and consistency with international good practice. Provisions were rated as aligned, stronger, or weaker, with rationale provided. The aim was to identify areas of consistency and opportunities for improvement.

In parallel, selected AMIC provisions were reviewed to explore how artificial intelligence technologies could support compliance, enhance oversight, or improve auditability. This scoping exercise highlighted areas where digital tools may offer practical benefits for animal welfare management.

6.0 Results

This section summarises the key outcomes of the project, structured around the defined milestones. As this project was primarily qualitative in nature, the results are presented through comparative tables and stakeholder engagement summaries rather than statistical datasets.

The main outputs include:

➢ Review and revision of the Consultation draft of the "Australian Animal Welfare Standards and Guidelines for Livestock at Processing Facilities" – Restraint section.

➢ Details of proposed revision provided in the comments template – Milestone 1 and 2

➢ Amendments to small section

➢ Development of workshop materials to support the meat industry in understanding their regulatory responsibilities concerning animal welfare

➢ A structured comparison of the AMIC Industry Animal Welfare Standard (3rd Edition) against three international animal welfare standards (Appendices 1 and 2)

➢ Identification of provisions where artificial intelligence (AI) technologies could enhance compliance, monitoring, and verification processes (Appendix 3).

7.0 Discussion

This project was designed to support the Australian red meat industry in responding to evolving animal welfare expectations by reviewing regulatory developments, assessing industry standards, and exploring opportunities for technological innovation. The results have several important implications for meat processors, industry stakeholders, and future research.

Milestones 1 and 2 focused on early engagement with industry and contributions to the national consultation process for the Australian Animal Welfare Standards and Guidelines for Livestock at Processing Facilities. The review and revision of the "Restraint" section enabled the red meat industry to provide practical feedback during the development phase of national animal welfare regulations.

This approach not only ensured that the draft reflected operational realities within processing establishments but also increased the likelihood of industry acceptance and smoother future implementation. The development of a structured comment template helped streamline and standardise feedback, facilitating clear communication between industry representatives and the regulatory drafting group. These activities demonstrate how early, well-organised engagement can lead to more workable, evidence-based standards.

Milestones 3 and 4 addressed the need to improve industry awareness and understanding of evolving animal welfare requirements. The delivery of tailored workshop materials for Tasmanian processors helped bridge the gap between regulatory expectations and on-the-ground practices. Topics included risk identification, the principles of animal welfare assessment, and the structure of the AMIC Industry Standard.

Feedback from workshop participants indicated that processors found the content practical, accessible, and immediately applicable. The development of the workshop for Tasmanian processors also provided a replicable model for future workshops in other jurisdictions. As new welfare requirements emerge, such as mandatory video surveillance, similar training initiatives will be critical in supporting industry adoption and implementation.

Milestone 5 delivered two key insights: how the AMIC Industry Animal Welfare Standard compares internationally, and how AI technologies could support future conformity with the standard.

The benchmarking analysis (Appendices 1 and 2) confirmed that the AMIC Standard is generally aligned with, or exceeds, key elements of international welfare standards. The scoping review of artificial intelligence applications (Appendix 3) also identified promising avenues for future investment. AI technologies offer the potential to make animal welfare monitoring more effective and efficient. While these tools are not yet widely adopted in Australian processing, their integration could enhance both the demonstration and assessment of conformity.

8.0 Conclusion

This project supported the red meat processing industry in understanding and responding to evolving animal welfare regulations through targeted engagement, detailed review, and scoping analysis. The key findings indicate that early industry involvement in the development of national standards, combined with practical training and international benchmarking, enhances both compliance and operational relevance. Workshops delivered to meat processors demonstrated that tailored, context-specific training effectively supports the understanding and implementation of animal welfare responsibilities. The benchmarking of the AMIC Industry Animal Welfare Standard (3rd Edition) against international frameworks confirmed that Australian standards are broadly aligned with credible global animal welfare benchmarks. The exploration of AI applications also highlighted emerging technologies with the potential to support real-time compliance and verification. These findings point to opportunities for further research and investment in digital tools that can improve welfare outcomes and reduce regulatory burden.

9.0 Recommendations

Based on the findings of this project, the following recommendations are provided to support practical application, inform future research and development, and guide adoption and extension efforts within the red meat processing industry:

1. Practical application for the meat industry

➢ Continue tailored training initiatives: Develop and deliver more context-specific workshops across jurisdictions, using the workshop framework as a model, to improve understanding and implementation of animal welfare responsibilities.

➢ Promote use of standardised tools: Encourage adoption of structured comment templates and feedback mechanisms to streamline industry input into future regulatory reviews.

➢ Support early engagement in regulatory development: Maintain strong industry participation in the development and review of national animal welfare standards to ensure practical, evidence-based outcomes.

2. Future RD&E Opportunities

➢ Investigate AI integration: Conduct applied research into the development and trial of AI-based technologies for animal welfare conformity and verification.

3. Adoption and Extension Activities

➢ Develop extension resources: Create user-friendly guidance materials, videos, or e-learning modules based on workshop content to improve accessibility and reach.

➢ Encourage industry-wide participation in AAWCS updates: Involve processors more directly in the ongoing revision of the AMIC Industry Animal Welfare Standard and its supporting guidelines.

10.0   Project outputs

Output type	Description	Details	Supporting materials
Consultation and Review	Small section review of the Australian Animal Welfare Standards and Guidelines for Livestock at Processing Facilities	- Industry comment template developed - Revised draft submitted to QDAF - Contributed to national consultation process	Comments Template Revised Section
Industry workshops	Animal welfare training workshop for red meat processors	- Dates: - Attendees: 22 - Topics: Welfare risks, AMIC Standard, regulatory duties	Workshop Slides & Handouts
Comparison of international standards	Comparison of AMIC Industry Animal Welfare Standard (3rd Ed.) against international standards	- Benchmarked against WOAH, NAMI, and RSPCA UK standards - Identified strengths and improvement areas	Appendix 1: Comparative Matrix Appendix 2: Summary Table
AI Scoping review	Review of artificial intelligence applications for AAWCS compliance	- Identified opportunities in video analytics, sensors, machine learning - Outlined future investment pathways	Appendix 3: AI Scoping Discussion Paper
Final report and snapshot	Final summary of findings, insights, and recommendations	- Submitted to AMPC - Includes full report and two-page summary	Completed 19/05/2025

11.0   Bibliography

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12.0 Appendices

12.1 Appendix 1

This comparative table systematically presents each provision category alongside the specific requirements outlined in each standard. By organising the information in this way, it facilitates a clear, side-by-side comparison that highlights areas of alignment, divergence, and gaps.

Category	AMIC Industry Standard	World Organisation for Animal Health	North American Meat Institute	RSPCA (UK)
Scope	Commercial processing of cattle (including calves), sheep (including lambs), pigs, goats, buffalo, deer and horses in Australian processing establishments; from receival at the processing establishment through to (and including) slaughter (confirmation of death).	Apply to the slaughter in slaughterhouses of the following domestic animals: cattle, buffalo, bison, sheep, goats, camelids, deer, horses, pigs, ratites, rabbits and poultry. Other animals, wherever they have been reared, and all animals slaughtered outside slaughterhouses should be managed to ensure that their transport, lairage, restraint and slaughter is carried out without causing undue stress to the animals; the principles underpinning these recommendations apply also to these animals.	Applies to the handling and slaughter of livestock (including cattle, sheep, pigs and goats) in meat processing facilities.	Applies to the entire lifecycle of farm animals, from birth to slaughter. Species-specific standards with a section covering transport and slaughter.
Management system	Requirement for a formal management system approach including but not limited to; identification and control of processes, performance monitoring; continuous improvement activities; internal audit and management review.	Does not explicitly refer to or describe a formal management system approach, however, covers many of the elements such as performance monitoring, documented information, training.	Does not explicitly refer to or describe a formal management system approach. Encourages the implementation of animal welfare management systems, including regular audits and continuous improvement processes.	Does not explicitly refer to or describe a formal management system approach, however, covers many of the elements such as performance monitoring, documented information, training.
Document control	Requires comprehensive documentation of handling procedures, incidents, training records, audits, and corrective actions. Specific requirements around document control.	Documentation should be maintained to support animal welfare practices and continuous improvement.	Emphasises the importance of maintaining detailed records, including audit results and corrective actions, to support animal welfare compliance.	Documented records of all welfare practices, incidents, and corrective actions.
Performance evaluation	Requires the identification of performance monitoring criteria, covering the whole standard. Includes animal-based indicators (e.g., vocalisations, slips/falls, goad use, stunning etc) and a structured monitoring checklist for regular internal and external audits.	Regular monitoring using animal-based indicators (e.g., Goad use, slips, falls) should be conducted.	Performance monitoring to include animal-based indicators (e.g., vocalisations, slips/falls, goad use, stunning etc)	Performance monitoring to include animal-based indicators (e.g., slips/falls, stunning etc)

Category	AMIC Industry Standard	World Organisation for Animal Health	North American Meat Institute	RSPCA (UK)
Internal audit	Requirement for internal audit, including requirement for it to be planned and maintained, detailing audit frequency, methods, responsibilities, planning, and reporting. It needs to consider process importance, animal welfare risks, customer feedback, site changes, and past audit results.	No requirement for internal audit. Required dedicated plan for animal welfare. The plan should include specific corrective actions in case of specific risks,	Refers to internal (self-audits) but does not include detail on process, scope, etc	Does not explicitly mention internal audit, however, it outlines several practices which serve a similar purpose.
Non-conformities and corrective action	Requires a structured approach to managing nonconformities. Establishments must correct the issue, identify its cause, implement and review corrective actions, and update the management system if needed. Corrective actions must match the severity of the nonconformity, and all actions must be documented, including the nature of the issue, the response taken, and the results.	Establishments should implement systems for continuous improvement in animal welfare, incorporating feedback from audits and new scientific knowledge. Encourages corrective action in response to animal welfare issues but does not outline a formal process.	Emphasises the need for corrective actions in response to audit findings and non-conformities. Encourages corrective action in response to animal welfare issues but does not outline a formal process.	Mandates prompt corrective actions in response to any non-conformities identified during audits or inspections. Requires corrective action in response to animal welfare issues but does not outline a formal process.
Management review	Requires an annual management review covering audit results, nonconformities, customer feedback, and improvement opportunities. The review must identify risks, opportunities, and any needed changes to the management system.	Specifies management responsibility for the competence of the operators, and the appropriateness, and effectiveness of the method used for stunning and the maintenance of the equipment, but no specific requirement for management review.	Encourages management support for animal welfare through training, monitoring, and recognition. However, it does not require a formal management review with a structured, documented process, defined inputs (such as audit results and corrective actions), or specified outcomes (such as identified risks and system changes).	Requires periodic management input to evaluate the effectiveness of welfare practices and make necessary adjustments, however, does not require a formal management review with a structured, documented process, defined inputs (such as audit results and corrective actions), or specified outcomes (such as identified risks and system changes).
Human resources and competency	All staff handling animals must receive training and supervision in animal welfare, proper handling, and the use of equipment. Competency must be documented.	All personnel involved in slaughter operations must be trained and competent in animal welfare practices. Regular assessments should be conducted to ensure ongoing competence.	Staff must be trained in animal welfare practices, with regular assessments to ensure competency.	All personnel must be trained in animal welfare standards, with ongoing assessments to ensure competence.

Category	AMIC Industry Standard	World Organisation for Animal Health	North American Meat Institute	RSPCA (UK)
Physical resources	Requires facilities and equipment to support animal welfare by preventing injury, pain, or distress. Infrastructure must support effective handling, segregation, thermoregulation, and animal comfort (e.g., space to stand, lie down, access water). Equipment must be well-maintained, with defective items removed from use. Adequate lighting, drainage, and emergency slaughter equipment are required, as well as facilities to care for weak or injured animals.	Requires lairage facilities to be designed for animal safety and low-stress handling. Animals must be able to move easily, stand, lie down, turn around, and access water (and feed if needed). Sick or injured animals must be able to be separated. Facilities should prevent injury, have good drainage, lighting, shelter, and ventilation, and be made from safe, strong materials. Noise and visual distractions should be reduced, and outdoor areas must protect animals from bad weather.	Requires facilities to be safe and comfortable for animals, with pens big enough to move around, non-slip floors, good lighting, and fresh air. Equipment must be well kept and not cause pain. The design should help animals move calmly without stress or injury.	Require that facilities and equipment must not cause injury or distress to cattle. They require that buildings and infrastructure be designed and maintained to support animal welfare, including provisions for adequate space, ventilation, lighting, and access to clean water. Floors must be non-slip to prevent injuries, and passageways should be wide enough to allow animals to move freely. The standards also emphasise the importance of maintaining equipment in good repair and ensuring that any potential hazards are promptly addressed.
Receival of livestock	Requires that livestock receival at the establishment is scheduled to ensure unloading occurs without delay, with immediate action taken if delays arise that could affect animal welfare. The standard highlights the importance of considering animal welfare needs when scheduling slaughter, such as prioritising vulnerable animals like bobby calves. It also requires the establishment to notify livestock suppliers of any animals deemed unfit for the intended journey and report any adverse welfare outcomes observed upon arrival.	Requires that livestock are unloaded promptly upon arrival. Procedures should minimise stress and prevent injury. Animals should be inspected for fitness for slaughter, and unfit animals should be managed appropriately.	Animals must be unloaded promptly and inspected for fitness, with unfit animals managed appropriately. Does not prescribe detailed procedures for livestock receival, it emphasises the importance of humane handling and adherence to plant-specific policies.	Animals must be unloaded promptly and assessed for fitness, with any unfit animals managed according to welfare protocols.

Category	AMIC Industry Standard	World Organisation for Animal Health	North American Meat Institute	RSPCA (UK)
Livestock handling	Requires that livestock handling uses low-stress techniques based on natural animal behaviour and avoids stressful noise and unnecessary isolation. Handling tools may be used appropriately, and unnecessary practices are prohibited. During unloading and movement to restraint, the establishment must monitor specific animal welfare indicators, including limits on falls and vocalisations. The use of electric goads is restricted to certain species and age groups, with defined limits on their use and prohibited application to sensitive areas. Goads must not be used on animals unable to move and must be kept away from livestock when not in use. Dogs used for moving livestock must be trained, muzzled, supervised, and are not permitted for handling horses, pigs, or deer.	Outlines general principles for animal handling during slaughter, emphasising the importance of staff competence, understanding of animal behaviour, and facility design to minimise stress and injury. Handlers should be experienced and trained to move animals calmly, avoiding sudden movements or noise that could cause panic. Facilities should be designed to facilitate smooth animal movement, considering the animals' natural behaviours and flight zones. While the chapter provides broad guidelines to ensure animal welfare, it does not specify detailed quantitative targets or restrictions on specific handling tools, as seen in the AMIC Standard. The use of electric prods should be minimised and only used when necessary. Rough handling or abuse is strictly prohibited.	Address livestock handling by promoting low-stress techniques and emphasising animal behaviour to guide humane practices. They stress that handling should be calm and quiet to reduce stress, avoiding loud noises or excessive use of handling tools. Electric prods may only be used as a last resort when animals refuse to move, and their use must be limited, never on sensitive areas like the eyes, genitals, or udders. Rough handling, including dragging or excessive force, is prohibited. The guidelines recommend regular staff training and ongoing monitoring of handling outcomes (e.g., falls, vocalisations) using animal-based measures.	Emphasise humane handling practices to minimise stress and ensure animal welfare. Handlers must be trained to understand cattle behaviour and stress factors, ensuring calm and considerate movement of animals. The use of electric goads is strictly prohibited. Facilities should be designed to facilitate smooth animal movement, reducing the need for forceful handling. Regular monitoring and staff training are essential to maintain high welfare standards.
Daily management	Requires that livestock are protected from adverse weather, have constant access to clean and palatable water, and are provided with uncontaminated, palatable feed if held for more than 24 hours. Animals must be inspected on arrival and at least once every 24 hours thereafter, with appropriate action taken if welfare issues are identified.	Facilities must provide adequate space, shelter, ventilation, water, and, when necessary, feed. Animals should be protected from adverse weather and allowed sufficient rest before slaughter. Regular inspections must be conducted at suitable intervals to detect and address any signs of distress or poor welfare.	Requires that livestock be protected from extreme weather and have continuous access to clean, fresh water. Animals held longer than 12 hours must be fed adequate, appropriate feed. Regular monitoring of animals for signs of distress or illness is mandatory, with prompt action taken if welfare issues are identified. The standard emphasises maintaining comfort and health throughout the holding period	Facilities must ensure animals have sufficient space, shelter, water, and feed, and are protected from adverse weather conditions. Requires that animals are regularly inspected and cared for to maintain their welfare. Animals must have continuous access to clean water and appropriate shelter to protect them from adverse weather conditions. Stocking densities should allow animals to stand, lie down, and move comfortably without overcrowding. Any sick, injured, or stressed animals must be promptly identified and separated for treatment or special care.

Category	AMIC Industry Standard	World Organisation for Animal Health	North American Meat Institute	RSPCA (UK)
Identification and management of weak, ill or injured	Requires that weak, ill, or injured livestock be promptly identified, segregated with continued visual and audible contact with their species, and cared for to prevent further pain or distress. Movement of such animals is only permitted if it will not cause additional suffering. If animals are suffering, they must be promptly subjected to emergency slaughter or humane euthanasia.	States that animals identified as weak, ill, or injured must be separated from others and receive appropriate care to prevent further suffering. Their movement should be minimised and only done if it does not cause additional pain or distress. If animals are suffering severely, humane killing or emergency slaughter should be carried out promptly to alleviate their pain.	Requires that that weak, ill, or injured animals be promptly identified, separated from healthy animals, and provided with appropriate care to minimise suffering. Movement should be limited and only undertaken when it does not cause additional distress. If the animal's condition is severe, emergency slaughter or humane euthanasia must be performed without delay	Requires that requires that weak, ill, or injured animals are promptly identified, separated from healthy animals, and provided with appropriate care or treatment to minimise pain and distress. Animals that are suffering and unlikely to recover must be euthanised humanely as soon as possible. Movement of these animals should be minimised and only carried out if it does not cause further harm or stress.
Restraint	Requires that livestock restraint for stunning be done using methods designed and operated effectively for the species, allowing proper positioning for stunning. Unacceptable practices are prohibited. Animals must not be left restrained or without water during breaks, and welfare must be monitored during any delays, with prompt action taken if needed. Vocalisation and electric goad use must be monitored when moving adult cattle or pigs into restraint. Stunning must occur immediately after effective restraint.	Requires that restraint methods used for stunning or slaughter minimise animal welfare impacts by providing non-slip floors, avoiding excessive pressure that causes struggling or vocalisation, using equipment designed to reduce noise and free from sharp edges, and preventing jerky or sudden movements. It prohibits restraint methods that cause avoidable suffering, such as suspending or hoisting animals by feet or legs (except poultry), inappropriate use of stunning equipment, mechanical clamping of limbs (except specific cases), breaking legs or tendons, blinding, severing the spinal cord to immobilise, and use of electric currents except for proper stunning.	Very detailed section on restraint. Requires that livestock restraint for stunning be done using methods designed and operated effectively for the species, allowing proper positioning for stunning. Unacceptable practices are prohibited. Animals must not be left restrained or without water during breaks, and welfare must be monitored during any delays, with prompt action taken if needed. Vocalisation and electric goad use must be monitored when moving adult cattle or pigs into restraint. Stunning must occur immediately after effective restraint.	Restraint methods must minimise pain and distress, with equipment designed and maintained to prevent injury. Requires that livestock restraint for stunning be done using methods designed and operated effectively for the species, allowing proper positioning for stunning. Unacceptable practices are prohibited. Animals must not be left restrained. Stunning must occur immediately after effective restraint.
Stunning procedures	Stunning must be effective and verified before proceeding to slaughter. Acceptable methods include captive bolt, head-to-body electrical, or CO$_2$ for pigs. Non-stunned slaughter prohibited.	Stunning must be effective and verified before proceeding to bleeding. Acceptable methods include mechanical, electrical, and gas stunning. Bleeding should commence immediately after stunning to ensure death before recovery. Non-stunned slaughter accepted.	Stunning must be effective and verified before bleeding. Acceptable methods include mechanical, electrical, and gas stunning. Non-stunned slaughter accepted.	All animals must be effectively stunned before slaughter, with methods including captive bolt, electrical, or gas stunning. Non-stunned slaughter prohibited.
Sticking procedures	Bleeding must commence immediately after stunning to ensure death before regaining consciousness. Stipulated technique.	Bleeding should commence immediately after stunning to ensure death before recovery. Stipulated technique.	Bleeding must begin immediately after stunning to ensure the animal does not regain consciousness. Stipulated technique.	Bleeding must commence promptly after stunning to ensure the animal does not regain consciousness. Stipulated technique.
Video surveillance	Voluntary under edition 3, but mandatory in edition 4 (from Jan 2026) for high-risk areas to verify animal welfare compliance. Must be reviewed by trained staff.	Not specified in general guidance.	Strongly encouraged, especially in sensitive handling and stunning areas; used to support training and compliance.	Mandatory in RSPCA certified facilities. Used to support staff training and monitor compliance with animal welfare standards.

12.2 Appendix 2

This comparative table lists each provision category, the AMIC Standard requirement, comparison ratings against each standard, and rationale for each assessment.

Category	AMIC Standard Stronger/ weaker/ aligned	Rationale
Scope	Aligned	AMIC has a clear and focused scope, covering the commercial processing of cattle, sheep, pigs, goats, buffalo, deer, and horses in Australian establishments—from receival through to slaughter and confirmation of death. RSPCA is aligned in terms of slaughter scope, with species-specific standards that include transport and slaughter, though it also extends beyond AMIC to cover the full lifecycle from birth. NAMI is broadly aligned, applying to handling and slaughter of livestock in processing facilities but with less detail on scope boundaries. WOAH has a broader scope, covering more species (including poultry and rabbits) and including animals slaughtered outside slaughterhouses, with general principles that apply across various settings
Management system	Stronger	AMIC sets the strongest and most explicit requirement for a formal management system among the four. WOAH is broadly aligned in intent but less specific, while NAMI and RSPCA are comparatively weaker, lacking formal system requirements despite including related components.
Document control	Stronger	AMIC has the strongest and most detailed requirements for documentation and control, including comprehensive records of handling procedures, incidents, training, audits, corrective actions, and specific requirements around document control. NAMI and RSPCA are broadly aligned but lack the same level of formal structure—while both require detailed records, they do not specify formal document control processes. WOAH is weaker, with a general emphasis on maintaining records to support welfare practices but fewer specifics and no clear document control expectations.
Performance evaluation	Stronger	AMIC has the strongest and most detailed requirements for performance monitoring, requiring the identification of monitoring criteria across the entire standard, the use of animal-based indicators (e.g., vocalisations, slips/falls, goad use, stunning), and a structured checklist for regular internal and external audits. NAMI and RSPCA are broadly aligned, requiring performance monitoring with animal-based indicators, but without a structured or comprehensive checklist. WOAH is weaker, recommending regular monitoring using animal-based indicators but lacking detail and structure.
Internal audit	Stronger	AMIC has the strongest and most detailed requirements for internal audits, requiring a planned and maintained audit process that defines frequency, methods, responsibilities, planning, and reporting. It must consider process importance, animal welfare risks, customer feedback, site changes, and past audit results. NAMI and RSPCA are broadly aligned in intent but less structured—NAMI refers to internal (self-)audits without detail, and RSPCA outlines practices that serve a similar purpose but does not explicitly mention internal audits. WOAH is weaker, with no internal audit requirement, though it does require a dedicated welfare plan with corrective actions for specific risks.
Non-conformities & corrective action	Stronger	AMIC has the strongest and most detailed requirements for managing non-conformities, with a structured process that includes correction, root cause analysis, review of effectiveness, system updates, and full documentation. RSPCA is broadly aligned in intent, requiring prompt corrective actions for non-conformities, but it does not outline a formal, documented process. WOAH and NAMI are weaker, encouraging corrective actions in response to welfare issues and audit feedback, but without specifying a structured or documented approach.
Management review	Stronger	AMIC has the strongest and most structured requirement for management review, mandating an annual, formal process that includes audit results, nonconformities, customer feedback, and improvement opportunities, with clear outcomes such as identifying risks and changes to the system. RSPCA and NAMI are broadly aligned in intent, requiring periodic or general management input to support welfare practices, but they lack a formal, documented review process with defined inputs and outputs. WOAH is weaker, assigning management responsibility for welfare outcomes but without any requirement for a management review process.

Category	AMIC Standard Stronger/ weaker/ aligned	Rationale
Human resources & competency	Aligned	AMIC has strong and specific requirements for staff training, mandating that all staff handling animals receive training and supervision in animal welfare, proper handling, and equipment use, with documented competency. WOAH, NAMI, and RSPCA are aligned, all requiring training in animal welfare and regular or ongoing assessments to ensure competence, with appropriate documentation maintained.
Physical resources	Aligned	AMIC has detailed requirements for physical resources, covering infrastructure, equipment, animal comfort, environmental controls, maintenance, and emergency facilities. WOAH is closely aligned with guidance on lairage design and construction to support smooth, low-stress animal movement and protection from climate and noise. NAMI provides similar requirements for safe, well-maintained facilities that promote calm handling and prevent injury but is less detailed than AMIC and WOAH. The RSPCA UK standard aligns with AMIC's core principles on preventing injury and ensuring welfare through space, ventilation and lighting.
Receival of livestock	Aligned	Alignment in relation to animals to be unloaded without delay and assessed for fitness on arrival. AMIC provides the most detailed requirements, including consideration of vulnerable animals when scheduling slaughter and mandatory feedback to suppliers about compromised animals. The other standards are aligned in intent but offer less procedural detail, focusing instead on prompt unloading and humane handling at receival.
Livestock handling	Aligned	AMIC provides the most detailed and prescriptive requirements for livestock handling, including low-stress techniques, strict quantitative targets (e.g., limits on falls and vocalisations), and specific conditions for the use of electric goads and dogs. NAMI also prescribes animal-based outcome targets and requires continuous monitoring during handling and stunning. While WOAH outlines strong guiding principles for humane handling, including trained staff, appropriate facility design, and minimisation of stress, it does not include detailed numerical thresholds. The RSPCA UK standard emphasises humane, calm handling and requires trained staff but prohibits the use of electric goads entirely, making it stricter in that regard than both AMIC and NAMI. Overall, AMIC and NAMI offer the most structured and measurable frameworks, with AMIC being more detailed in equipment-specific restrictions and RSPCA being the most restrictive on goad use. So, while implementation details vary, the overall intent and animal welfare outcomes they aim to achieve are broadly aligned.
Daily management	Aligned	All emphasise protecting animals from adverse weather and ensuring continuous access to clean water. AMIC and NAMI specify feed provision if animals are held beyond certain durations (24 hours for AMIC, 12 hours for NAMI). Regular inspections are required across all standards to identify and address welfare concerns promptly. Overall, they align closely in requiring daily management practices that prioritise animal comfort, health, and welfare while held in lairage or similar facilities.
Management of weak, ill, injured	Aligned	All are closely aligned in their requirements for identifying and managing weak, ill, or injured livestock, emphasising prompt segregation, provision of care, and minimising movement to avoid further suffering.
Restraint	Aligned	All are closely aligned in their approach to restraint, emphasising species-appropriate methods that enable effective stunning while preventing unnecessary pain or distress. AMIC, NAMI, and RSPCA provide highly detailed requirements, including prohibitions on unacceptable practices, the need to monitor vocalisation and goad use, and ensuring animals are not restrained during breaks. WOAH aligns in intent but is more focused on the design and operation of equipment and the prohibition of severe inhumane practices.
Stunning procedures	Stronger	All are aligned in requiring that animals be effectively stunned before slaughter, with verification of stun effectiveness prior to bleeding. They all accept mechanical, electrical, and gas stunning methods. While the level of detail varies slightly, particularly regarding specific methods and timing of bleeding, the core principle of ensuring effective stunning to maintain animal welfare is consistently upheld across all standards. However, they differ significantly in their stance on non-stunned slaughter. AMIC and RSPCA UK explicitly prohibit non-stunned slaughter, requiring all animals to be stunned prior to slaughter.
Sticking procedures	Aligned	AMIC has clear and specific requirements for bleeding, mandating that it must commence immediately after stunning to ensure death before the animal can regain consciousness, with a stipulated technique. NAMI, WOAH, and RSPCA are all aligned, each requiring prompt or immediate bleeding after stunning with the same intent (to prevent recovery of consciousness). All specifying the technique to be used.
Video surveillance	Stronger	AMIC's requirement for video surveillance is stronger compared to WOAH and NAMI, and aligned with RSPCA UK. While AMIC currently treats CCTV as voluntary, it is a mandatory requirement from January 2026.

12.3 Appendix 3

This table outlines areas within the AMIC Industry Standard where artificial intelligence (AI) technologies could support conformity, monitoring, and verification. It links provisions in the standard with AI tools that may improve efficiency, objectivity, and consistency in implementation and auditing of the standard.

Provision category	AI technology	Value to AMIC conformity and verification	Relevant AMIC Standard provision
Arrival and unloading	Video analytics to detect animal-based indicators such as slips, falls, baulking, turning, vocalisation or other signs of distress	Provides continuous, objective monitoring of unloading practices; allows early identification of handling issues; supports data-driven training; enables trend analysis and implementation of corrective action.	5.1-5.3
Monitoring of holding conditions	Computer vision and thermal imaging to monitor stocking density, rest patterns, aggression, heat stress or access to resources.	Enables detection of behavioural and thermal cues linked to welfare; reduces reliance on manual spot-checks; facilitates proactive interventions.	5.4-5.6
Competency and training	AI-powered adaptive learning platforms with scenario-based simulations and performance tracking.	Ensures consistent training delivery and measurable skill acquisition; builds competency over time; supports continuous learning and demonstration of competency.	3.1-3.4
Internal auditing	Machine learning to analyse audit data, detect patterns in non-conformances, and flag anomalies	Supports standardised audit processes; helps uncover systemic issues early; reduces variability in audit outcomes.	2.3, 6.2
Handling practices	Behaviour recognition via video (e.g., sudden movements, noise levels, use of tools, aversive contact)	Offers objective assessments of animal response to handling; highlights areas needing improved stockperson behaviour or infrastructure changes.	5.2-5.3
Stunning	Sensor-based monitoring of electrical and CO_2 stun parameters and video validation of effective stunning	Ensures repeatable and verifiable stunning outcomes; improves accuracy of records; aligns with animal-based welfare indicators.	5.7-5.8
Slaughter	Computer vision to confirm bleeding efficiency and cessation (confirmation of death); monitoring of abnormal bleedline behaviour and movement on the bleedline; integration with stunning data	Tracks process consistency; aligns with animal-based welfare indicators; allows monitoring in hard to reach areas of the bleedline.	5.9-5.10
Video surveillance	Intelligent video analysis with behaviour tagging and automatic alerting for abnormal activity	Enhances effectiveness of CCTV systems by directing attention to relevant footage; improves monitoring efficacy and transparency.	7.1-7.3
Record keeping	Data aggregation from sensors, video, and operational logs; Natural language processing (NLP) to summarise narrative reports	Standardises record formats; increases accessibility and accuracy of documentation; identifies correlations in aggregated data.	6.1-6.3
Continuous improvement	AI models that learn from past audit and incident reports to predict emerging welfare risks	Enables evidence-based adjustments to management practices; supports prioritisation of resources and strategic planning.	2.2,6.4