![AMPC - AUSTRALIAN MEAT PROCESSOR CORPORATION]

AI Objective Measures
Animal Husbandry AI Objective Measurement in Australian Abattoirs

Project code	Prepared by	Date submitted
2024-1093	Impetus Animal Welfare Ltd	20/06/2025

Project description

This project, delivered by Impetus Animal Welfare Ltd, explored whether a commercially available AI system—previously deployed in international settings—could be adapted to monitor animal welfare in an Australian red meat processing environment. The primary aim was to evaluate the system's ability to support daily QA processes by continuously detecting key animal welfare events through existing CCTV infrastructure.

A six-month trial was conducted at a commercial abattoir, where the system was configured to monitor critical stages such as unloading, lairage, and slaughter. The trial assessed the system's detection accuracy, usability, and alignment with existing QA tasks and compliance expectations. Staff involvement was a core component of the project, helping to evaluate the AI's potential to improve visibility, efficiency, and welfare oversight across the plant.

The project also provided an opportunity to test how detection data could be reviewed, validated, and incorporated into decision-making. It aimed to determine whether such systems could shift welfare monitoring from periodic manual checks to a continuous and data-driven process. The learnings offer practical insights into the infrastructure, training, and cultural readiness needed for wider AI adoption in the industry.

Project content

The trial included on-site hardware installation, expansion of camera infrastructure, and configuration of the AI model using site-specific footage. The system was trained to detect welfare measures such as electric prodder use and ineffective stunning, with detections reviewed by QA personnel via a live dashboard. A clicker tool was introduced to help capture tagged events for validation.

Baseline monitoring practices were benchmarked against the AI system to assess time savings and detection coverage. The project also delivered a cost-benefit analysis across multiple scenarios and developed a readiness matrix to help processors evaluate site-specific adoption factors.

Consultation with stakeholders from industry, government, and animal welfare organisations informed the system's development and future pathways. The trial provided key insights into operational requirements, barriers to scale-up, and opportunities for long-term commercial adoption.
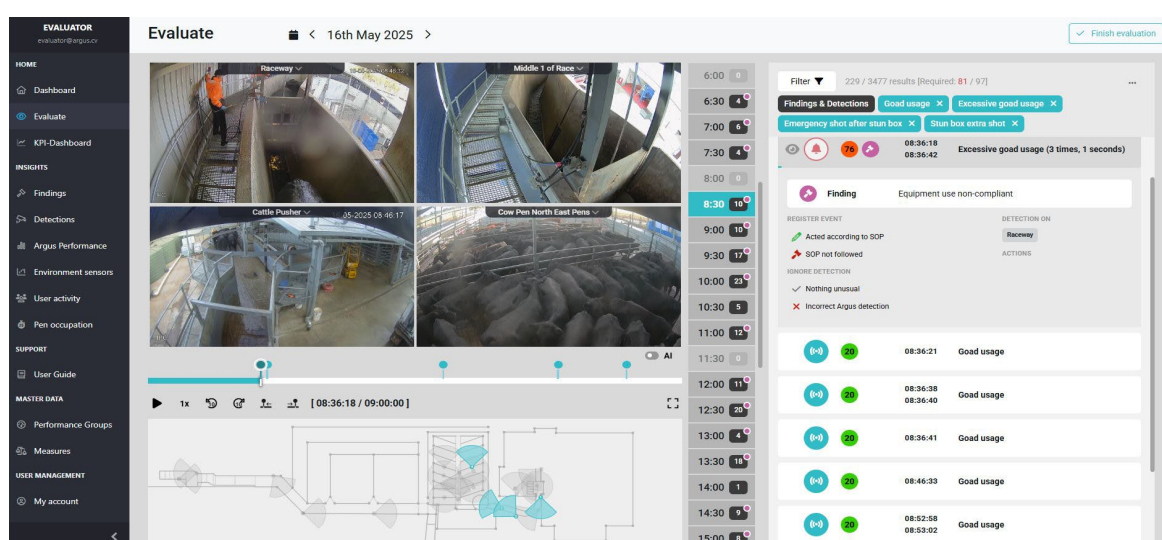
AI system dashboard displaying real-time detections and monitoring data across key animal welfare measures

Project outcomes

The project confirmed that AI systems can be installed and operated effectively in commercial abattoir settings, using existing CCTV infrastructure. The AI system provided continuous, real-time monitoring of animal handling practices and successfully detected key welfare indicators including electric prodder use, slips and falls, and re-stunning events. It replaced routine manual CCTV review and substantially increased the number of animals monitored—from a few hundred per week under QA observation to approximately 875 animals per day.

QA personnel found the dashboard interface intuitive and the detection summaries useful, particularly for replacing daily CCTV review tasks. While reviewing and validating detections required time, the process was described as more efficient and informative than traditional manual methods. The AI system routinely flagged more animal welfare issues than were typically observed manually, and several detections prompted internal discussions about handling practices and staff training. Some false positives were reported, particularly for more nuanced behaviours, highlighting the ongoing need for human oversight and model refinement.

Notably, the system revealed areas of potential improvement that had previously gone undetected—such as patterns in prodder use and stalling in the round pen—that allowed QA staff to proactively intervene. Staff also suggested new detection features, including identifying when gates come into contact with animals and when animals fall in the lead-up race, which are now being explored for future updates.

Although the system did not deliver immediate financial savings within the six-month trial, the cost-benefit analysis identified several areas where longer-term value could emerge. These include reduced compliance costs, better identification of practices that may contribute to dark cutting, and improved reporting capacity. Importantly, the project produced a practical readiness matrix and a benchmark framework to help other processors assess their suitability for adoption and measure ongoing value. The findings demonstrate that while AI systems may not yet be plug-and-play, they are operationally viable and already contributing to improved visibility and discussion around animal welfare on-site.

Benefit for industry

This project provides a tested framework for integrating AI-based monitoring systems into commercial abattoirs to enhance animal welfare oversight. By using artificial intelligence to continuously monitor animal interactions and identify welfare-related events, these systems can increase the consistency, scope, and visibility of monitoring—helping processors stay ahead of evolving regulatory and customer expectations.

The trial demonstrated that AI systems can replace routine CCTV review, highlight undetected issues, and support more proactive animal welfare management. As the technology matures, it will increasingly reduce the need for manual review and enable QA teams to focus on higher-value tasks.

To support wider industry uptake, the project developed a readiness matrix (see below) to help processors evaluate their suitability for AI adoption. This tool considers infrastructure, staff capacity, data systems, and organisational culture—offering a practical starting point for processors considering implementation.

Readiness Matrix

Animal welfare culture

How is animal welfare incorporated into the value/mission of the business?

Is the motive of the business to meet minimum standards or premium product differentiation?

Who is responsible for managing animal welfare?

What animal welfare training do staff receive and how often?

What are the current challenges related to animal welfare?

Data collection

Are there mandatory requirements related to animal welfare and monitoring? If yes, then what are they?

Are there customer and/or voluntary requirements related to animal welfare and monitoring? If yes, then what are they?

What data is collected during monitoring activities each day or week?

How much time is taken conducting monitoring activities each day or week?

How is data recorded (e.g., paper or software record)?

Who has access to data collected?

Resource availability

Is there a dedicated person (e.g., QA or AWO) that will be responsible for learning and using the system?

Is there a dedicated IT team?

Is there an electrician on-site or contracted?

What is the current IT system on-site and configuration of local network?

Are CCTV cameras already in place? If yes, then how many, what type, and what locations?

Are handling aids such as electric prodders used? If yes, how many and what areas?

What stunning system and back up-stunning system is used?

Financial capacity

Is there capacity to invest in required hardware (e.g., additional CCTV cameras)?

Is there capacity to cover initial cost for installing hardware and the system?

Is there capacity to cover ongoing subscription for the system?

Where issues are detected by the system, is there the ability to invest in change (e.g., new infrastructure or training of staff)?